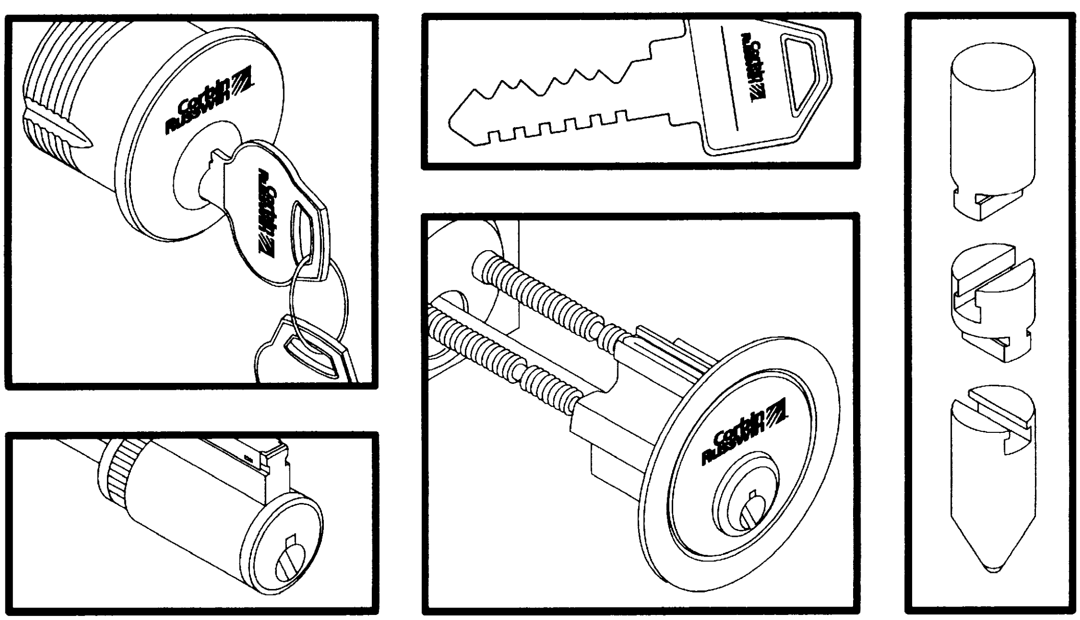
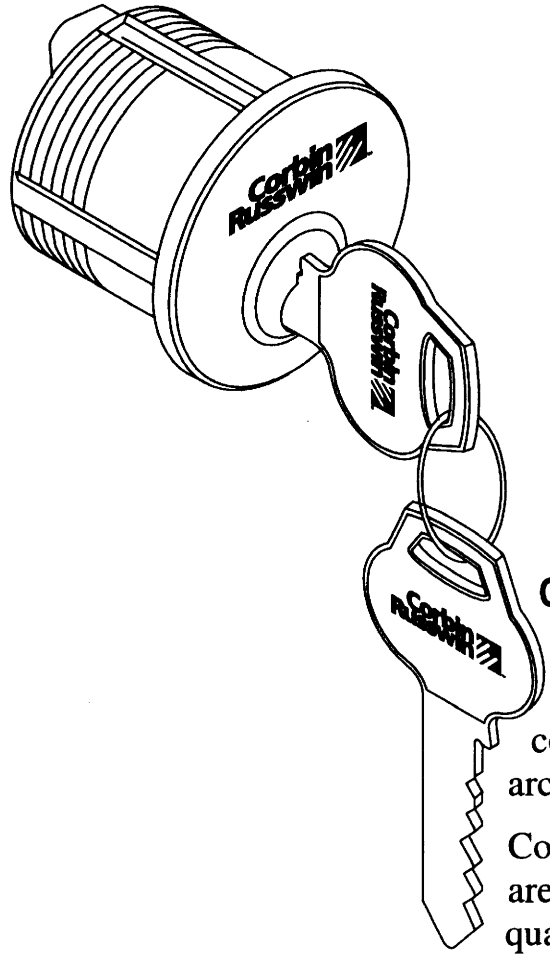
Corbin Russwin™

Cylinder Manual



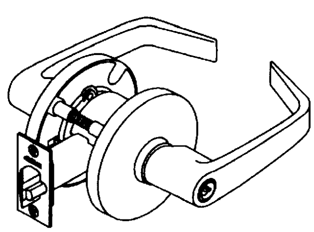
Corbin Russwin™

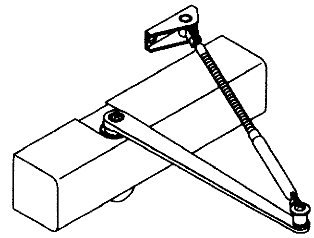


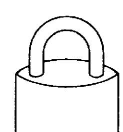
Cylinders . . . The Heart of Our Products

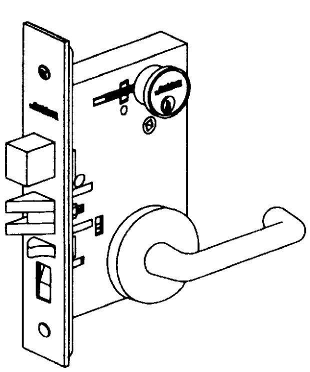
A master key system is the "software" of a building's security. It must be coupled with fine cylinders and architectural hardware.

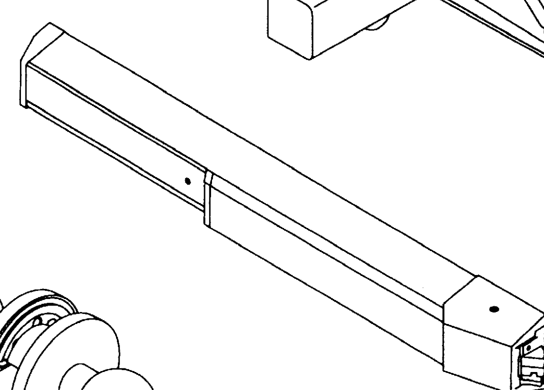
Corbin Russwin is a leader in all three areas. Expertly designed systems, high quality cylinders and a full line of locksets, exit devices and door controls allow you to secure your property with a single source supplier.

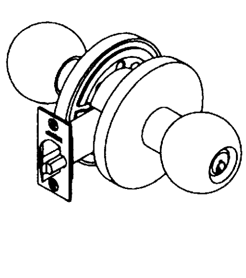












Keyway Quick Index

How to Use This Manual

In an effort to promote a common language, this manual adopts the terminology standardized in *The Professional Glossary of Terms Relating to Cylinders, Keys and Master Keying*, reprinted in Appendix E.

Corbin and Russwin each have nearly a century of experience in the manufacture of pin tumbler cylinders. During this long history, we have made technological advances creating a far wider variety of cylinder and key types than any other manufacturer.

For the hardware distributor or retail locksmith, this manual provides everything under one cover, making it easier to service all your customers' Corbin Russwin cylinders and keying systems. It includes all modern cylinders and keys, as well as certain discontinued items which are still often encountered in the field.

Because of the large amount of detail presented here, the institutional locksmith who services only one Corbin Russwin master key system with one or two types of cylinders will find only a few selected pages of this manual useful. Those pages should be clearly marked, or copied and placed in a separate binder for fast reference. This helps avoid confusion with information which may not be relevant.

To help determine which pages apply to *your* keying system, you must:

1. **Determine the "bitting class."** This is based on your keyway(s) and detailed on the next page.
2. **Determine the depth system.** If you have factory original keys with the depths stamped on the bow, this task will be easier. Find the page(s) in Appendix A devoted to your bitting class. Measure two or three factory original keys with calipers or some other accurate measuring device.

   There are two different depths systems possible for most Corbin Russwin bitting classes. Scan the depth specifications on both pages as you take the measurements and zero in on the one page which matches your system. That will be your most valuable reference page. It contains all pin lengths you will need to service your system using original Corbin Russwin parts.

   CANADA ONLY

   Most Canadian Corbin Russwin keying systems generated before 1982 deviate from the U.S. depth and spacing specification in Appendix A. If you are servicing Canadian cylinders, you need the special Canadian Supplement to this Appendix.
3. **Determine the type of cylinders** you are servicing (conventional, interchangeable core, high security, master ring, etc.) Some keying systems integrate more than one of these cylinder types. Find those pages in Unit 3 through the Table of Contents. They provide step by step instructions on combinating your cylinders using the pin lengths from the page in Appendix A.
4. **Find the information on your keyway(s)** in Unit 2. This allows you to see the relationship between your keyways and the amount and direction of expansion.

Prevent the Destruction of Your Master Key System

While this manual provides a comprehensive technical review, it does not substitute for training in master keying. The reader is strongly advised to attend a formal class on master keying presented by local or national locksmith associations.

Fine books are also available on the subject through locksmith suppliers and trade magazines. This instruction will help you to understand master keying theory so you can service master key systems without introducing key interchange.

Obtain a copy of the bitting list for your system through your Corbin Russwin distributor. This is a list of all key combinations used. Obtain all new combinations through the factory to maintain the key system's integrity. If you do generate combinations in the field, be sure to update the factory so no duplication will occur on future orders.

Even when the correct combinations are used, a system can deteriorate when keys are not cut properly. Key machines must be adjusted periodically to be sure they will make accurate keys.

If a cylinder is combinated to a third or fourth generation duplicate key, or an inaccurate code key, it usually will not operate properly with factory original keys. This practice can also destroy a master key system by creating key interchange with keys which are cut correctly but *not supposed to* operate.

Key Bitting Classes

A "bitting class" is a major grouping of keys, based on the width (height) of the key blade and certain characteristics of the key bitting dimensions. You must know the class when ordering cylinders, plugs and key blanks because certain key bows and cylinder types are not available with some of the older bitting classes. Refer to the catalog or price book for availability.

Each bitting class has its own system of depths for the key cuts, so it is extremely important to know the bitting class when originating keys on code machines in the field. Using the wrong specs usually causes cylinder malfunction and key interchange in a keying system. See Appendix A for complete specs.

Corbin Bitting Classes
The keyways which were associated only with Corbin before the brand merger are the most straightforward. Corbin has only two bitting classes. They are called *X Class* and *Z Class*. The distinguishing feature of X Class keys is the radiused blade bottom.

Each key section or multiplex key system is strictly associated with one class. They are easy to differentiate because each had a different standard bow. By late 1993, however, all Corbin Russwin keys will have a common bow shape. The differentiating characteristics are illustrated below with the traditional bows.

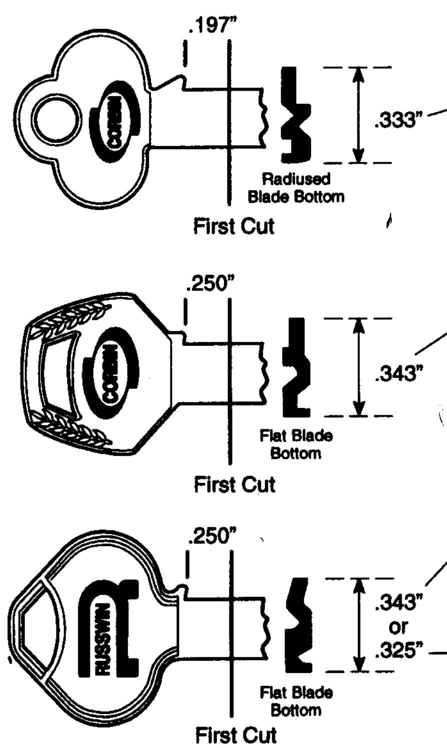
Corbin's oldest keyways are X Class and were developed between the 1890's and 1968. The Z Class was introduced in 1959. Both are still active for new keying systems.

Most X Class cylinders manufactured since 1983 have a slot milled into the plug face to compensate for the difference in the spacing to the first cut. See below. The bottom shoulder was removed from all X Class keys to prevent interference in knobs and cylinders.

Russwin Bitting Classes
These are harder to distinguish, because Russwin's single bow shape provides no clues.

Russwin keys use two different blade widths: .325" for keyways designed before 1938 and .343" for all others. Each blade width has three different bitting classes associated with it.

New Corbin Russwin Keyways
All Corbin Russwin keyways introduced in 1993 follow Corbin Z Class specifications. This includes the L Series and new patented keys not published for security reasons.

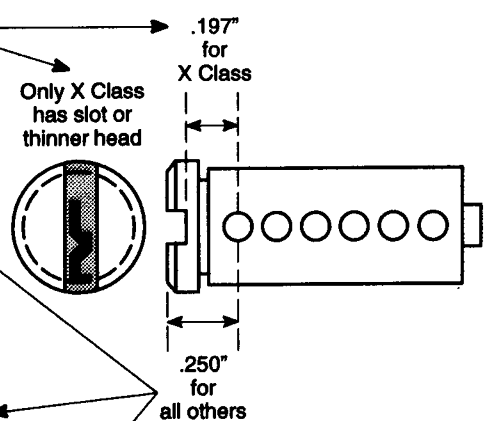


X Class Keyways
27 Series, including 28 and 29
57 Series
67 Series, including 68 and 69
77 Series, including 78 and 79
97, 99, AR, BR, BL

Z Class Keyways
59 Series
60
70
L Series
and most restricted keyways

Keyway	Bitting Class
D Series	DH Class
H Series	DH Class
N Series	N Class
981, 982, 983	981 Class
Russwin restricted	DH Class

Keyway	Bitting Class
752	752
252, 852	852
A Series	A Class
G	852 Class



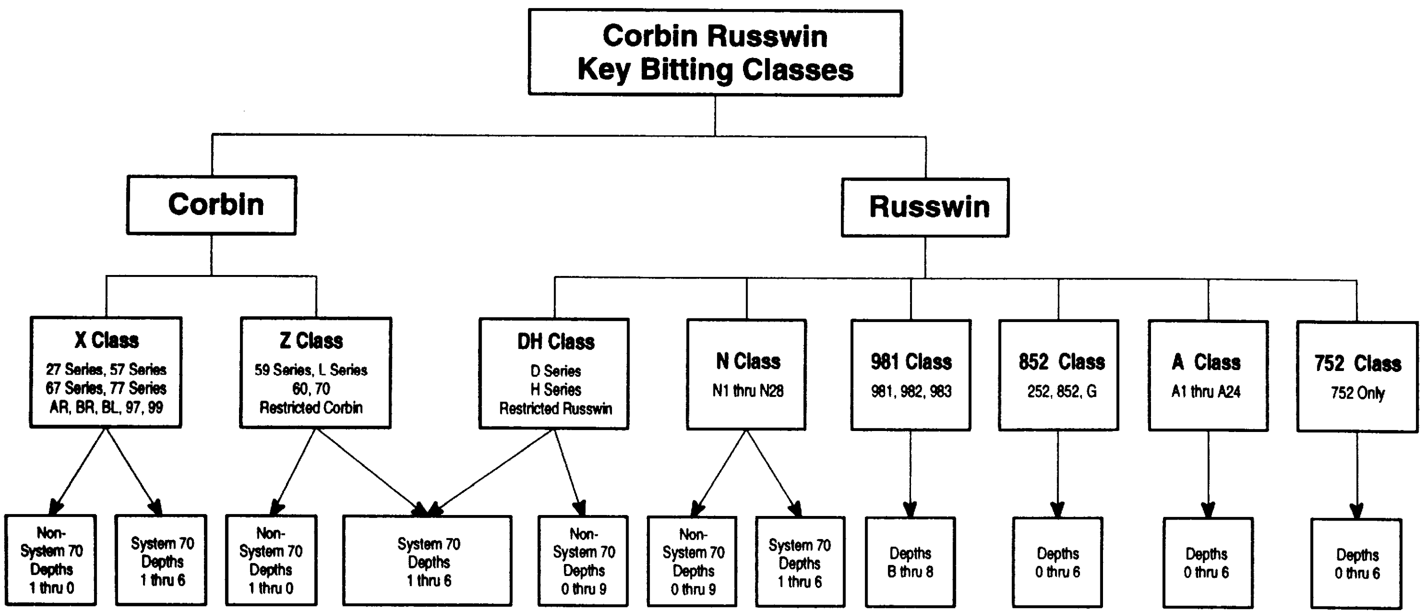
Spacing Difference
X Class is .197" to the first cut, while Z Class and all Russwin are .250". The difference, .053", is the depth of the slot in the plug head. Interchangeable core and cylinders for master ring CK4200 and UT5200 Series locks have a thinner plug head with no slot.

Depth Systems

In 1970, the factory began using a new depth system called System 70. The increment is .028", or the old Corbin increment. Its use was limited to the largest keying systems until 1976, when it became the standard for DH, N and Z Class keys. X Class was added in 1977.

To differentiate, the original 10-depth system is now called "Pre-System 70" (or "Non-System 70".) If you are servicing one keying system, it will use *one or the other.* Depth systems must never be mixed!

The illustration below shows all Corbin Russwin key classes, and further breaks them down to show the two depth systems, where available.



Depth Systems and Master Keying Capacity

When servicing a master key system, the reader is cautioned to use only key bittings which are compatible with the system. Never use stock keys or other random combinations. Doing so introduces key interchange and quickly destroys the integrity of the keying system.

Correct master keying requires much more than simply knowing which pins to drop into a cylinder. As stated on page 4, there are so many sources for training in the general science of master keying. The purpose of this section is to add Corbin Russwin specifics to an understanding of general principles learned elsewhere.

Master keying classes are presented around the country by national and local locksmith associations. Locksmithing periodicals often contain articles on master keying and there are several good books available on the subject through the aforementioned periodicals and through locksmith supply companies.

We cannot include a comprehensive presentation of master keying in these few pages and lock manufacturers often deviate from published rules to accommodate certain situations. If you discover deviations from the parameters on these pages, contact the Key Records Department at Corbin Russwin to determine whether the bittings are legitimate, or the result of errors.

Two areas where Corbin Russwin deviates from the general rules on the next few pages are the frequent use of the rotating constant method of progression and the type of progression used in master ring systems. The latter is briefly covered in the master ring section of Unit 3. The former must be learned from master keying text books and classes.

Keying System Limitations

We are embarking on a presentation of the math used to determine the number of theoretical change keys in a master key system. However, many *theoretical* combinations are not actually *usable*. For instance, many keys must be eliminated simply because they cannot physically be cut. This occurs when a very shallow cut is next to a very deep cut. This concept is called the *maximum adjacent cut specification* (MACS.)

System 70's MACS is 4. That means that combinations with 1 next to 5 (difference of 4) are acceptable, but those with 1 next to 6 (difference of 5) are uncuttable. Such combinations are called *MACS violations* because they exceed the MACS.

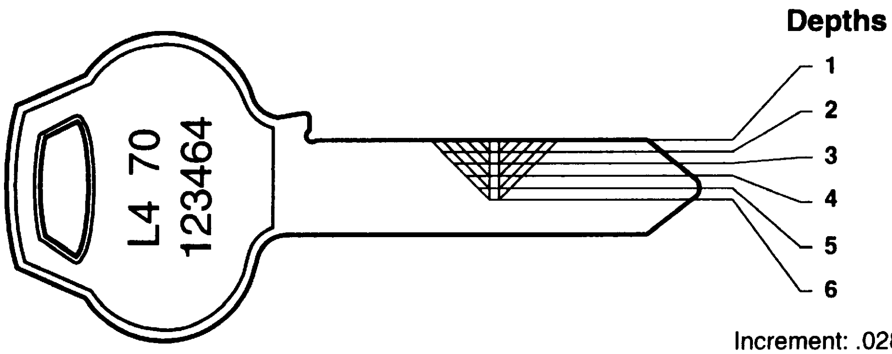
Other factors which reduce the number of combinations available include:

- excessive levels of keying
- most cross keying
- selective master keys
- construction master keying
- interchangeable core cylinders
- mixing conventional cylinders with high security or master ring cylinders
- using Brink or blockout function cylinders

If any of these features are or will be required in a keying system, **they must be specified from the very start. If not, it is seldom possible to integrate them later.**

Depth Systems and Master Keying Capacity

System 70



Increment: .028"

All cuts are read and written **Bow to Tip**

System 70 master key systems use *single step* progression. That is, they don't have to skip numbers within a pin chamber because one System 70 increment already equals two Pre-System 70 increments. All System 70 bittings are read and written bow to tip.

In order to determine how many theoretical keys are available at each level of keying in a multi-level keying system, use the number of progressives in each chamber as the multiplier. In the case of System 70, the multiplier is 5.

On the next page, we illustrate a grand master key system first. There are three levels of keying, but you only have to work for two of them. The top master key -- in this case, the GMK -- is the key you start with, so it is is not progressed. Divide the key into two pieces: one for each level of keying progressed under the GMK: the masters and changes.

Given a 6-pin cylinder with one keyway, there are only three possible ways to divide the key for masters and changes. They are shown on the facing page. The positions of the key used for any one level of keying will vary from system to system. In other words, in the first illustration, the key is divided into a piece with one cut and another piece with the remaining five cuts.

Key Bitting Array

TMK (top master key)	1	2	5	4	6	3
Progression Possibilites	2	3	6	5	1	4
	3	4	1	6	2	5
	4	5	2	1	3	6
	5	6	3	2	4	1
	6	1	4	3	5	2

5 numbers remain in each column.
Only the TMK is omitted.

A 6-pin cylinder has 5^6 theoretical changes: 15,625 total per keyway.
5-pin keying systems have 5^5 (3,125) and 7-pin keying systems have 5^7 (78,125) theoretical changes per keyway using total position progression. When the rotating constant method is used, this math does not apply.

Construction master keying and special cylinders such as interchangeable core, blockout and Brink function cylinders require certain bittings to be removed from the key bitting array, reducing the system's potential size. See those specific parts of this manual for details.

We show the one cut devoted to masters in the first position, but it could occur in any position. The remaining four cuts, wherever they are, are used for change keys.

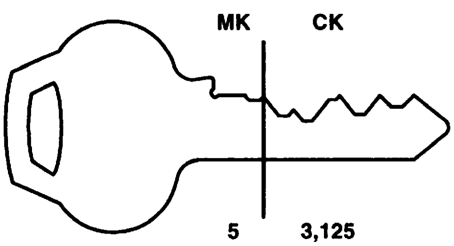
Using keyways to expand a master key system is a topic far too advanced to present in the space available here. The general rules are:

- Each keyway can be divided differently, if necessary.
- If you divide all keyways the same way, you can multiply any ONE level of keying by the number of keyways used. For example, to obtain 100 change keys under each master in the last illustration, use four keyways. (4 x 25 = 100.) All masters, grands and the great grand must then be cut on the multi-section key which will enter all four keyways.

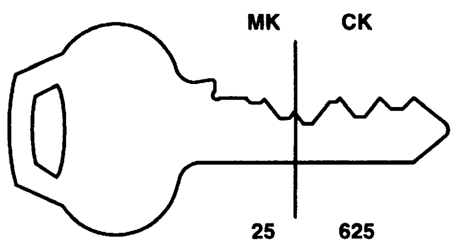
Depth Systems and Master Keying Capacity

System 70

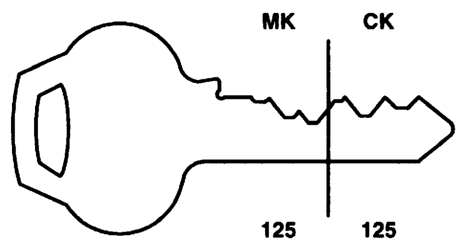
Grand Master Key System



One cut provides 5 theoretical masters under the grand. The remaining five cuts provide 5 x 5 x 5 x 5 x 5 = 3,125 change keys under each master.



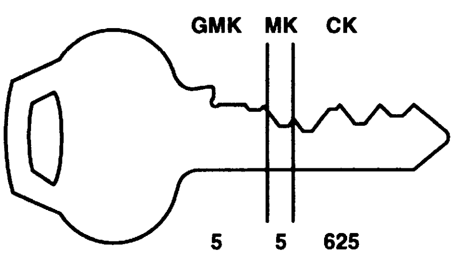
Two cuts give 5 x 5 = 25 theoretical masters under the grand. The remaining four cuts give 5 x 5 x 5 x 5 = 625 theoretical change keys under each master.



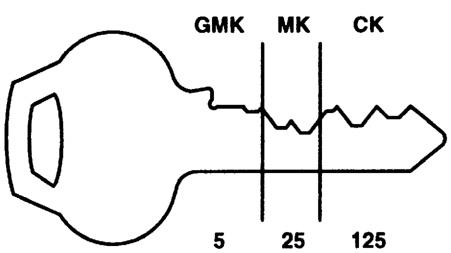
Three cuts give 5 x 5 x 5 = 125 keys at each level.

Great Grand Master Key System

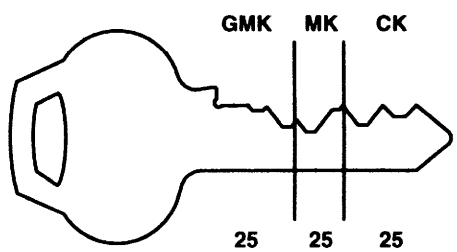
For a great grand master key system (4 levels of keying) you must divide the key into three pieces. As we saw above, the top master key is not progressed. You only have to work for the three levels below the great grand. Again, there are only three possible ways to divide the key, but remember that the location of the chambers devoted to each level will vary from one system to another. The examples illustrated use only one keyway. Most great grand master key systems use additional keyways in a multiplex key system.



One chamber gives 5 grands under the GGMK. One chamber gives 5 masters under each grand. The remaining four chambers give 5 x 5 x 5 x 5 = 625 theoretical changes under each master.



One chamber gives 5 theoretical grands under the GGMK. Two chambers give 5 x 5 = 25 theoretical masters under each grand. The remaining three chambers give 5 x 5 x 5 = 125 theoretical changes under each master.



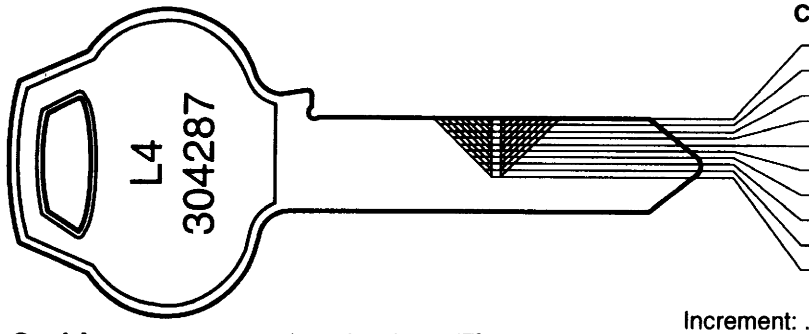
Two chambers used for each level give 5 x 5 = 25 theoretical combinations at each level.

The dividing lines between the cuts of the keys shown above should be considered as brick walls built to separate the levels of keying. These walls are built at the beginning of each keying system and are not movable. For instance, if you have a 3-level system laid out as shown in the second illustration and you use up all 25 master keys, you cannot dip into the third chamber to obtain a 26th master key. This would create key interchange. If you have a multiplex key system with additional keyways available, you must use a new keyway to get the new master key.

You must specify system expansion with the most accurate guess at the outset of each new keying system in order for new combinations to be available when you need them.

Depth Systems and Master Keying Capacity

Pre-System 70



Depth Numbering System

All Corbin	Russwin DH, N	Russwin 981
1	0	B
2	1	0
3	2	1
4	3	2
5	4	3
6	5	4
7	6	5
8	7	6
9	8	7
0	9	8
Increment: .014"	.015"	

Corbin cuts are read and written **Tip to Bow**
Russwin are read and written **Bow to Tip**

Pre-System 70

The increment between depths is so small that there would be key interchange if two keys within the same master key system only differed by one depth. That is, both a 1 and a 2 must not be used together in the same pin chamber in the same keying system . Therefore, Pre-System 70 requires "two step progression" for master keying. The cuts must be at least two increments (a total of .028" or .030") apart to provide enough locking from one key to the next. Thus, only odd depths or even depths are used within any one pin chamber (unless you have master ring cylinders).

3 4 0 2 1 5 **TMK** (top master key)

1	~~1~~	~~1~~	~~1~~	~~1~~	1
~~2~~	2	2	~~2~~	~~2~~	~~2~~
~~3~~	~~3~~	~~3~~	~~3~~	3	3
~~4~~	~~4~~	4	4	~~4~~	~~4~~
5	~~5~~	~~5~~	~~5~~	5	~~5~~
~~6~~	6	6	6	~~6~~	~~6~~
7	~~7~~	~~7~~	~~7~~	7	7
~~8~~	8	8	8	~~8~~	~~8~~
9	~~9~~	~~9~~	~~9~~	9	9
~~0~~	0	~~0~~	0	~~0~~	~~0~~

Forbidden numbers are lined out. TMK bittings are also normally omitted from change keys.

Key Bitting Array

TMK (top master key)	3	4	0	2	1	5
Progression Possibilites	5	6	2	4	3	7
	7	8	4	6	5	9
	9	0	6	8	7	1
	1	2	8	0	9	3

Only 4 numbers remain in each column.

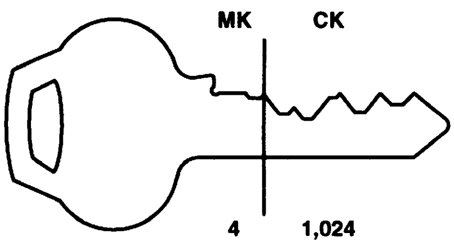
A 6-pin cylinder has 4^6 theoretical changes: 4,096 total per keyway.
5-pin keying systems have 4^5 (1,024) and 7-pin keying systems have 4^7 (16,384) theoretical changes per keyway using total position progression. When the rotating constant method is used, this math does not apply.

Construction master keying and special cylinders such as interchangeable core, blockout and Brink function cylinders require certain bittings to be removed from the key bitting array, reducing the system's potential size. See those specific parts of this manual for details.

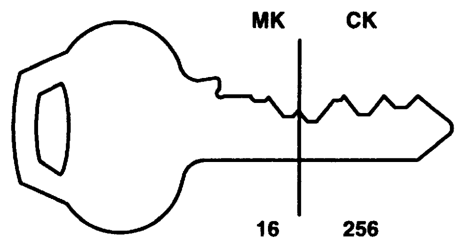
Depth Systems and Master Keying Capacity

Pre-System 70

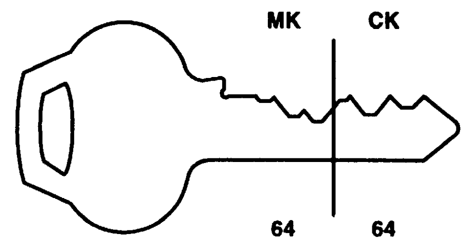
Grand Master Key System



One cut allows for 4 theoretical masters under the grand. The remaining five cuts allow for 4 x 4 x 4 x 4 x 4 = 1,024 change keys under each master.



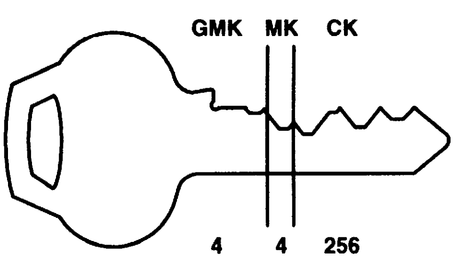
Two cuts give 4 x 4 = 16 theoretical masters under the grand. The remaining four cuts give 4 x 4 x 4 x 4 = 256 theoretical change keys under each master.



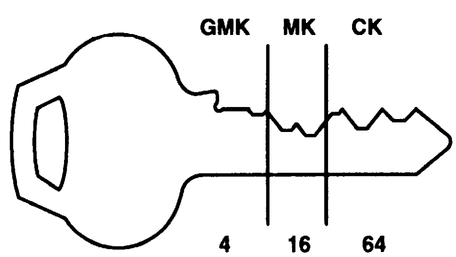
Three cuts give 4 x 4 x 4 = 64 keys at each level.

Great Grand Master Key System

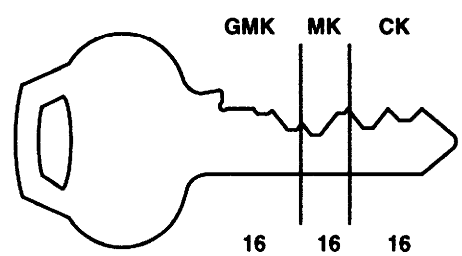
For a great grand master key system (4 levels of keying) you must divide the key into three pieces. As we saw above, the top master key is not progressed. You only have to work for the three levels below the great grand. Again, there are only three possible ways to divide the key, but remember that the location of the chambers devoted to each level will vary from one system to another. The examples illustrated use only one keyway. Most great grand master key systems use additional keyways in a multiplex key system.



One chamber gives 4 grands under the GGMK. One chamber gives 4 masters under each grand. The remaining four chambers give 4 x 4 x 4 x 4 = 256 theoretical changes under each master.



One chamber gives 4 theoretical grands under the GGMK. Two chambers gives 4 x 4 = 16 theoretical masters under each grand. The remaining three chambers give 4 x 4 x 4 = 64 theoretical changes under each master.



Two chambers used for each level give 4 x 4 = 16 theoretical combinations at each level.

The dividing lines between the cuts of the keys shown above should be considered as brick walls built to separate the levels of keying. These walls are built at the beginning of each keying system and are not movable. For instance, if you have a 3-level system laid out as shown in the second illustration and you use up all 16 master keys, you cannot dip into the third chamber to obtain a 17th master key. This would create key interchange. If you have a multiplex key system with additional keyways available, you must use a new keyway to get the new master key.

You must specify system expansion with the most accurate guess at the outset of each new keying system in order for new combinations to be available when you need them.

Depth Systems and Master Keying Capacity

Very Old Russwin

This information is only for three key classes: 752, 852 and A. All use the narrow .325" blade keys and the factory no longer generates new systems with them. The depths are labeled 0 (shallowest) through 6 (deepest.) However, the starting point of the zero depth is different for each. To extend exhausted systems, a "B" depth shallower than zero is possible for 852 class.

The increment is .020". A #1 master pin would be too thin for practical use, so change keys must stay at least 2 increments away from the TMK. However, change keys may differ from each other by only 1 increment, provided they are not cross keyed together.

The MACS published for these key classes for the field is 5 but the factory can cut keys with adjacent cuts of 06 and 60.

1	6	0	3	6	0	**TMK** (top master key)
~~0~~	0	~~0~~	0	0	~~0~~	
~~1~~	1	~~1~~	1	1	~~1~~	Forbidden numbers are lined out.
~~2~~	2	2	~~2~~	2	2	TMK bittings are also normally omitted from change keys.
3	3	3	~~3~~	3	3	
4	4	4	~~4~~	4	4	
5	~~5~~	5	5	~~5~~	5	
6	~~6~~	6	6	~~6~~	6	

Key Bitting Array

TMK (top master key)	1	6	0	3	6	0
Progression Possibilites	3	0	2	5	0	2
	4	1	3	6	1	3
	5	2	4	0	2	4
	6	3	5	1	3	5
		4	6		4	6

Some columns have 4 while others have 5 progressives available.

In this example, there are 4 x 5 x 5 x 4 x 5 x 5 (10,000) theoretical change keys per keyway. When the rotating constant method is used, this math does not apply. There is no uniform formula for determining the number of theoretical changes in these old key classes because the number of progressives is not the same in all columns of the key bitting array. Columns with 0 or 6 in the TMK yield 5 progressives while the others yield only 4. This is why TMKs in these key classes often used 0's and 6's. Beginning in 1909 all factory TMKs ended in 0.

Plug Diameters

Plug diameter affects two aspects of cylinder servicing:

1. Choosing of the correct size bottom pin (and build-up pin, if required)
2. Changing plugs in cylinders whose plug diameters differ, based on the date of manufacture.

If you routinely service Corbin Russwin products, you will quickly learn to recognize the two diameters on sight.

It is not necessary to memorize which products use which diameters, but it is important to know that the usage has changed over the years, and the same keying system may use both plug diameters.

A Historical Perspective

Corbin Russwin still maintains keying systems in thousands of very old buildings, so locksmiths encounter old and new cylinders daily. The use of the two plug diameters can seem very confusing, so we are providing this background information.

Stage 1

Until 1959, each brand had its own plug diameter. All Corbin was .509" and Russwin was .552" except padlocks, which were made by the Corbin Cabinet Lock Division.

Stage 2

In 1959, Corbin Z Class keyways appeared. They used the same plugs as Russwin, while the older X Class continued to use .509" for everything.

Stage 3

In 1964, the round interchangeable core cylinder was born, followed in 1971 by the modern figure–8 version. Both use .509" regardless of the keyway.

Stage 4

In 1983, Corbin X Class changed to .552" to join the rest of the cylinder line – – with the continued exception of padlocks and interchangeable cores. One cylinder didn't make this transition and became a new exception: master ring cylinders for CK4200 and UT5200 series locksets.

Stage 5

Beginning with the design of the CK4400 Series cylindrical locks, introduced in 1986, it became evident that .509" allowed an easier fit into the industry's more traditional knob, lever and spindle designs, so it was decided that *new* products would use the .509" plug regardless of key class. Existing products kept whichever plug diameter they had been using.

Today, still in Stage 5, the *product* determines the plug diameter, as follows:

.552" Diameter

All high security cylinders
All other cylinders not listed as
  .509" below

.509" Diameter:

CL Series key-in-lever cylinders
Conventional interchangeable core
CK4400 Series key-in-knob cylinders
PL5000 Series padlocks
X Class master ring cylinders for
  CK4200 and UT5200 Series
All Corbin X Class keyway cylinders
  before 1983

Stage 6

The future. Corbin Russwin plans to standardize on the .509" plug for all cylinders except high security.

Summary

We have now presented all key classes, depth systems and plug diameters. Appendix A ties this information together by detailing all key bitting specifications and pin lengths. If you are maintaining one keying system, you will only need one page of Appendix A. You will then have two sets of pins to deal with. They correspond to the two plug diameters within your particular key class and depth system.

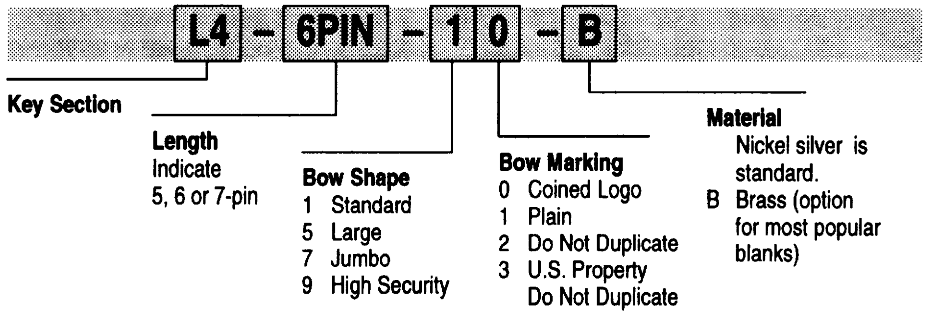
Most older pin kits supported only one plug diameter and are not adequate for servicing today's products. The C6 and R6 kits introduced in 1986 and the PK Series kits introduced in September 1993 eliminate this problem. See catalog for details of current offering and Unit 4 for details of older kits.

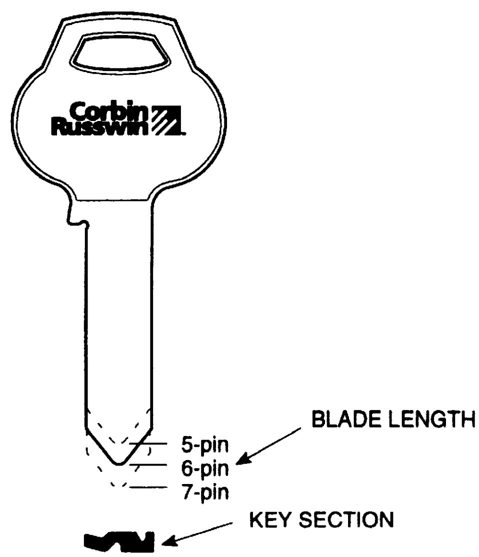
Key Blanks

There are three components to a key blank:

- Key Section
- Blade Length
- Bow Shape & Marking

All of these must be clearly defined when ordering Corbin Russwin key blanks. Follow the example at the right.





Key Section

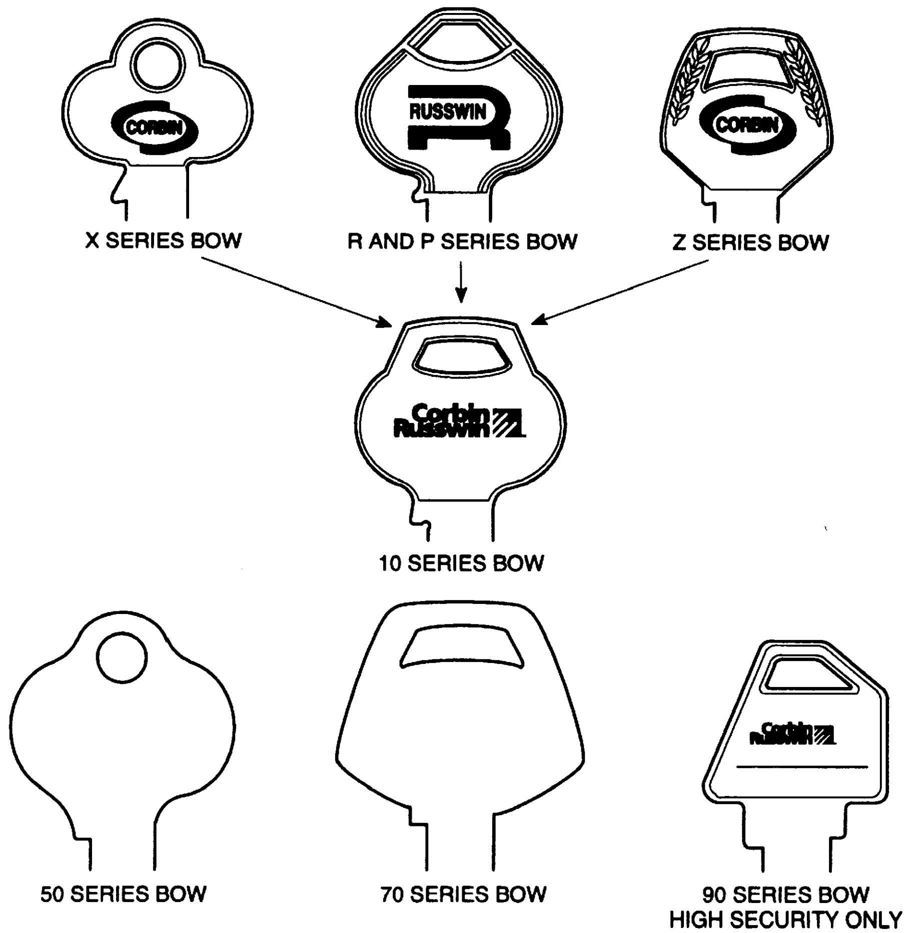
This is the cross section of the key blade, viewed from bow to tip. Non–restricted key sections and keyways are shown in the next section of this manual.

Important: When dealing with a multiplex key system, *never cut keys onto a higher level key blank than necessary.* Doing so will destroy the integrity of the keying system by limiting expansion and/or creating key interchange!

Blade Length

5-pin, 6-pin and 7-pin keying systems each require key blanks of the proper length. You can determine the length by counting the number of cuts in the key, the number of loaded chambers in the cylinder, or comparing the key with the illustration above.

Key Blanks



Bow Shape and Marking

Consult the latest Corbin Russwin catalog or price book for the current offering of optional key bows and special stamping.

The traditional Corbin X, Corbin Z and Russwin bows are being discontinued in favor of the new unified Corbin Russwin 10 Series bow.

Other Specifications

Material and special indications for the tip of hotel emergency key blanks are added at the end of the regular number. The most popular key blanks are available in brass. See the pages of Unit 3 devoted to hotel function cylinders for the EMK blank specifications.

Using Non-Original Blanks

There are several manufacturers of aftermarket key blanks. Many of these blanks, when cut to Corbin Russwin bitting specifications (Appendix A), operate properly in Corbin Russwin cylinders. There are occasional problems, however, when blanks deviate too much from original Corbin Russwin specifications.

The most common problems occur with X Class keys. Either they do not have a proper radius on the bottom of the blade, or they have a bottom shoulder which interferes with the cylinder face.

For best results, always use original Corbin Russwin key blanks. A cross reference is provided in Appendix C to determine the original Corbin Russwin key section and blade length from a non–original key blank number.

Keyways and Key Sections

Terminology

In order to introduce this section, five definitions from Appendix E will be paraphrased:

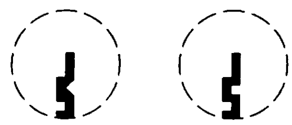
A *keyway* is the shape of the slot which the key enters. A *key section* is the cross section of the key blade. Each keyway has a corresponding key section and there are thinner key sections (*multi-section keys*) which enter more than one keyway.

A *multiplex* key system is a family of keyways and key sections designed to be tied together in a large master key system. A *simplex* keyway or key section stands by itself. It is not part of a multiplex system.

Simplex Keyways

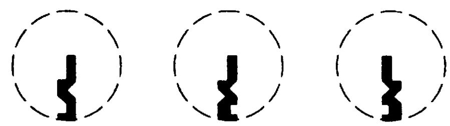
98 was Corbin's first pin tumbler keyway, dating from 1888. Cylinders with this simplex keyway are still in use. Since it is obsolete it is not shown here. See page 75 for specifications.

Most of Corbin Russwin's keyways are multiplex, but there are a few simplex keyways. Russwin has two: 752 and G. They are presented later in the Russwin section. Corbin's six non-restricted simplex keyways are presented here. They are available 5, 6 and 7-pin, while Russwin's are 5-pin only.



97 99

97 and 99 keyways are X Class. 99 was introduced in 1895 and 97 in 1908. The first keying systems on these keyways were 4-pin, but 5-pin soon became the standard. 6-pin is today's standard and 7-pin is optional.



AR BR BL

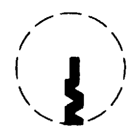
AR, BR and BL are X Class, introduced around 1914. BR and BL are the reverse of each other. All three of these keyways are extremely rare, so they are highly recommended for new keying systems which only require one keyway, but a great deal of regional exclusivity. 6-pin is standard and 7-pin is optional.

These are Corbin's only "lettered" keyways, so be aware that key blank catalog numbers have the normal format, but look unusual.
Example: AR-6PIN-10.

P & F Corbin's AR, BL and BR are often confused with keyways *of the same names* used by Corbin Cabinet Lock, formerly a sister company. This can lead to errors in ordering. An example of a CCL key blank number is 4193C-AR.

CCL's keyways are totally unrelated, so it is important to determine which company's product is involved if you have a request for one of these keyways.

Corbin Russwin does not support the CCL keyways and CCL does not support Corbin Russwin keyways. Each product must be ordered from its respective manufacturer.



70

70 is the reverse of 60. It uses Z Class bitting specs and was the original stock keyway for the Emhart high security cylinder. It is very uncommon, making it a good candidate for new keying systems which require only one keyway, but need some regional exclusivity.

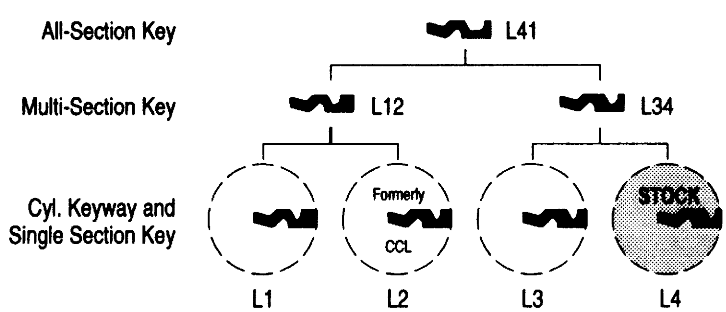
L2 had been introduced as a simplex keyway in 1975 for Corbin Cabinet Lock's limited line of architectural hardware. These keys and cylinders only bore the Emhart brand name. When the CCL Division was sold, L2 remained with Corbin and Russwin.

With the merging of the Corbin and Russwin brands in May 1993, L2 was expanded into a 4-keyway multiplex system. L4 replaced 60 and D1 as the stock keyway at that time.

HIGH SECURITY

AVAILABLE

Available 5, 6 and 7-pin
Z Class bitting (pages 62, 63 and 64)
Reverse of Russwin D Series

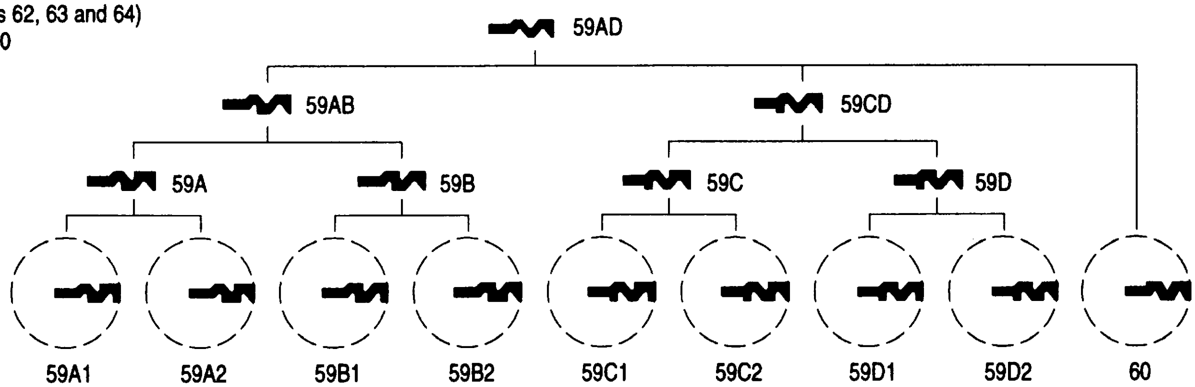


Corbin 59 Series Keyways

The 59 Series keyways were introduced in 1959. Notice that the multiplex key system incorporates 60, which replaced 77 as Corbin's stock keyway in 1960. A master key system originated on 60 keyway can be expanded beyond its original scope, although it requires issuing the all-section key to do so.

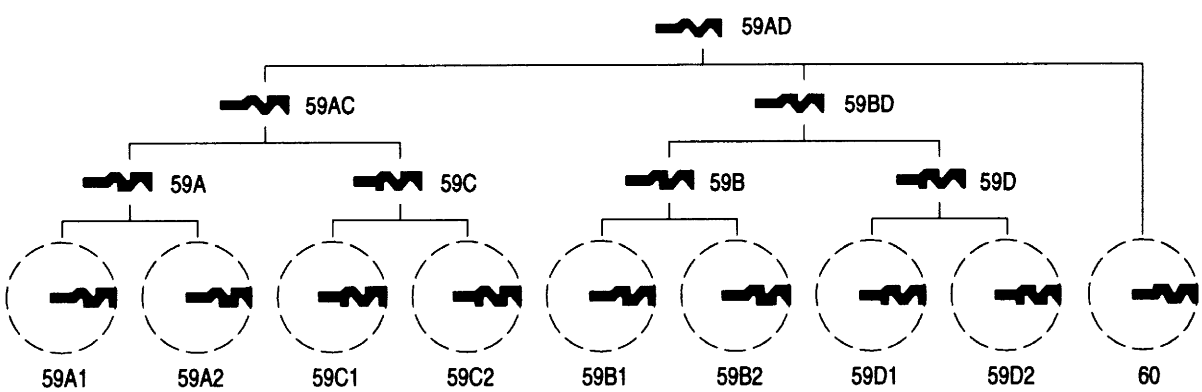
HIGH SECURITY AVAILABLE

Available 5, 6 and 7-pin
Z Class bitting (pages 62, 63 and 64)
60 is the reverse of 70



59 Series Alternate Structure
This structure is useful when a keying system expands in directions different from those originally anticipated. It may not be specified for new systems.

HIGH SECURITY AVAILABLE



Corbin 57 Series Keyways

This multiplex system began with just 57A and B group in 1930. The C's were added in 1963 and the D's in 1968.

There is no 57CD multi-section key available. Milling such a combination would result in the 57AD all-section key.

Original jobs on all X class keyways were done with **Pre-System 70 depths** read and written **TIP to BOW!** Most jobs and stock cylinders furnished on these keyways since 1970 use System 70 depths (always bow to tip.) See Appendix A for complete key bitting and pin length specifications.

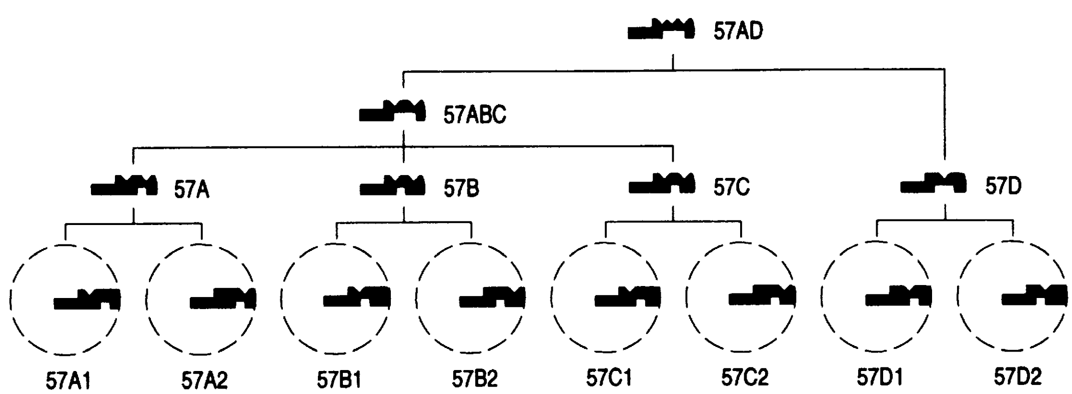
HIGH SECURITY



NOT AVAILABLE

Available 5, 6 and 7-pin
X Class bitting (pages 66 and 67)
Reverses:

57A1	27B2
57A2	27B1
57B1	27A2
57B2	27A1



Corbin 27, 67 and 77 Series Keyways

Structure

All three of these multiplex systems are laid out identically. They share a peculiar feature. Each has a keyway which was the stock keyway at one time or another. The key section for that keyway (27, 67 and 77) also enters a pair of lower level keyways (28–29, 68–69 and 78–79, respectively.)

This is highly unusual in multiplex key systems and the use of the lower pair of keyways is avoided today, due to the ready availability of the 27, 67 and 77 key sections wherever keys are duplicated.

The A1, A2, B1 and B2 keyways in these groups were added later and follow a more logical multiplex structure.

History:

27 replaced 97 as Corbin's stock keyway around 1924. 28 and 29 were added in 1926. 27A1 was added in 1930. The rest were added in 1963.

67 replaced 27 as the stock keyway in 1936. 68 and 69 were added in 1938. 67A1 was added in 1942. The rest were added in 1963.

77 replaced 67 as the stock keyway in 1951. 78 and 79 were added in 1954. 77A1 was added around 1958. The rest were added in 1963.

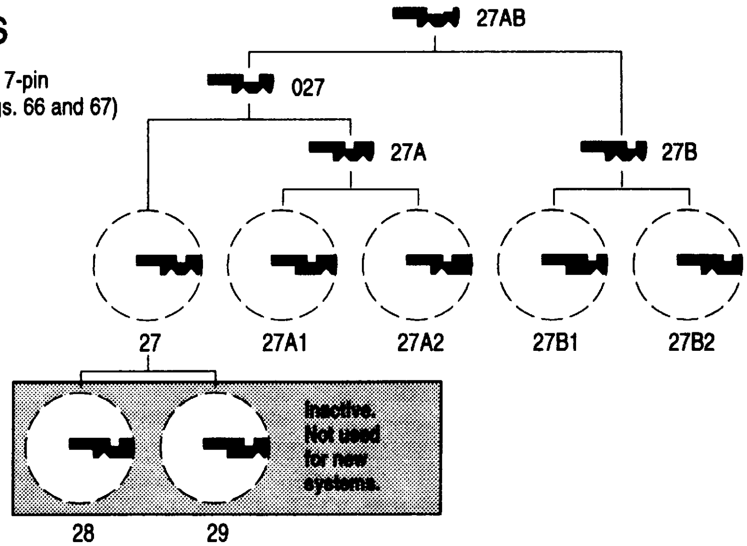
Original jobs on all X class keyways were done with Pre-system 70 depths read and written **TIP to BOW**. Most jobs and random keyed cylinders furnished on these keyways since 1977 use System 70 depths notated bow to tip. See Appendix A for complete key bitting and pin length information.

27 Series

Available 5, 6 and 7-pin
X Class bitting (pgs. 66 and 67)
Reverses:

27A1	57B2
27A2	57B1
27B1	57A2
27B2	57A1

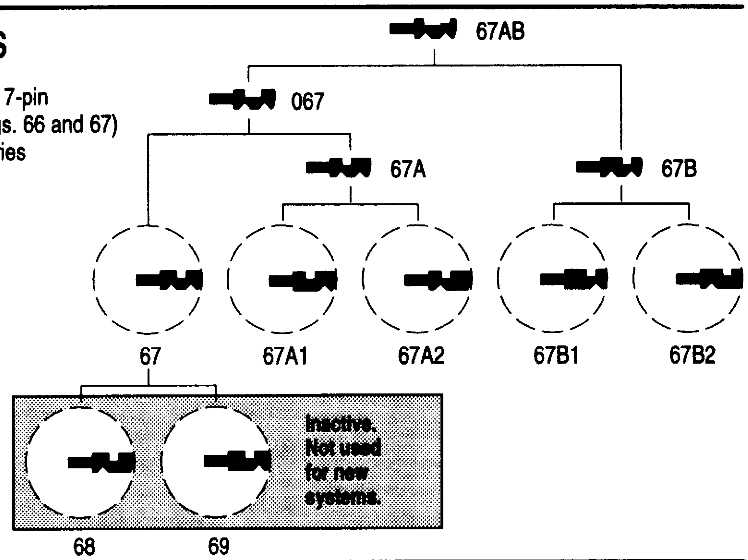
HIGH SECURITY
NOT AVAILABLE



67 Series

Available 5, 6 and 7-pin
X Class bitting (pgs. 66 and 67)
Reverse of 77 Series

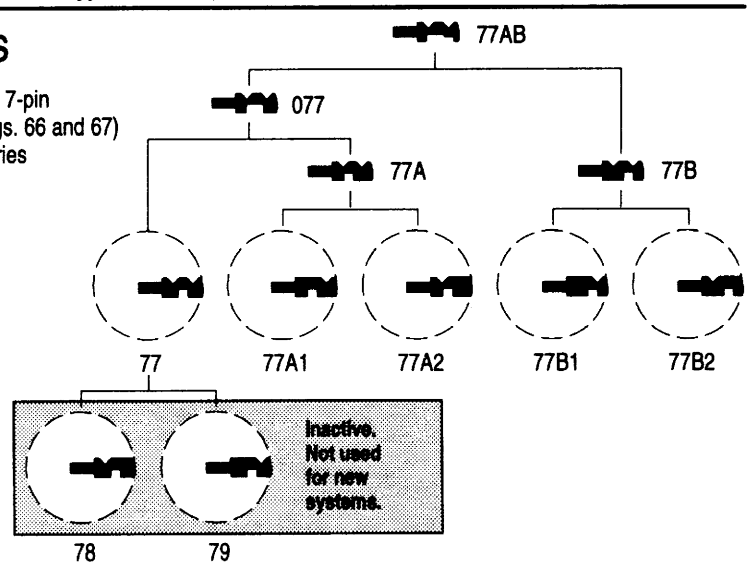
HIGH SECURITY
NOT AVAILABLE



77 Series

Available 5, 6 and 7-pin
X Class bitting (pgs. 66 and 67)
Reverse of 67 Series

HIGH SECURITY
NOT AVAILABLE

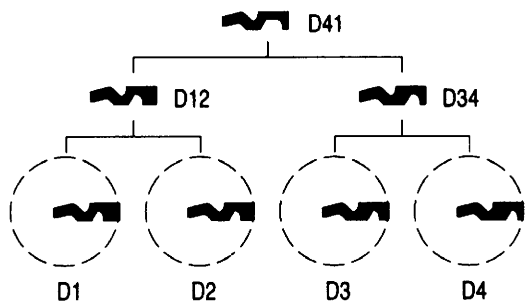


Russwin D and H Series Keyways

These keyways were introduced in 1965, when D1 replaced 981 as Russwin's stock keyway.

Available 5, 6 and 7-pin
DH Class bitting (pages 62, 63 and 65)
Reverse of L Series

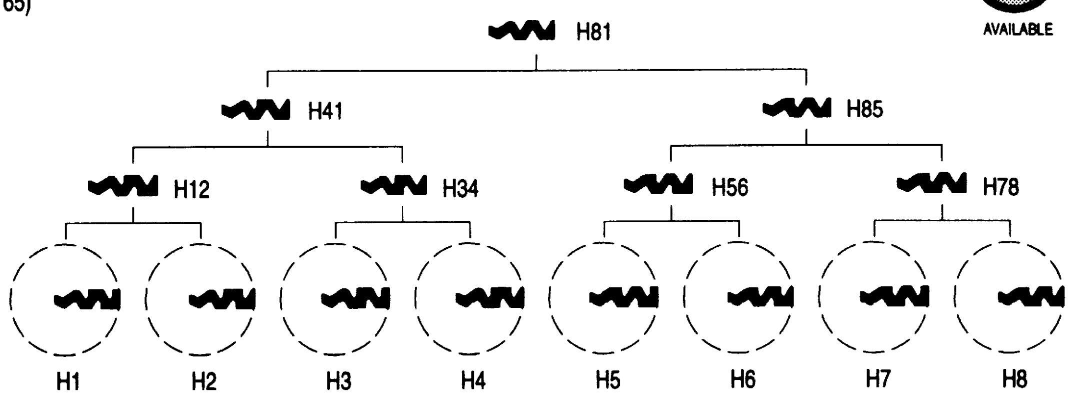
HIGH SECURITY AVAILABLE



H Series Standard Structure

Available 5, 6 and 7-pin
DH Class bitting (pages 62, 63 and 65)

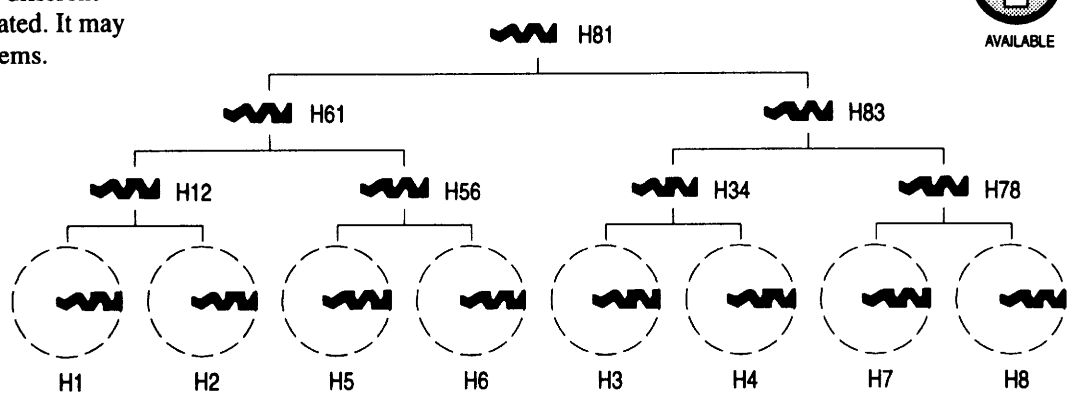
HIGH SECURITY AVAILABLE



H Series Alternate Structure

This structure is useful when a keying system expands in directions different from those originally anticipated. It may not be specified for new systems.

HIGH SECURITY AVAILABLE



Russwin 981, 852 and 752 Classes (Inactive)

Russwin 981 Class

981 was Russwin's stock keyway from 1938 to 1965, following 852 and followed by D1. It is still common in older residential applications and small commercial master key systems. When a keying system expands beyond 981, the 982 and 983 keyways are used.

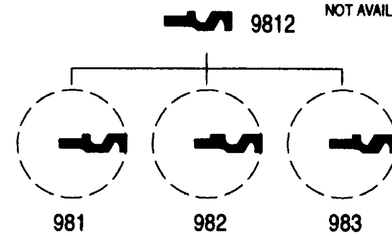
981 class began as a 9-depth system. The shallowest was 0 and the deepest was 8. When "exhausted" master key systems had to be extended, a cut *shallower than zero* was created and labeled "B". **Caution:** Do not use DH or N Class depths to cut 981 Class keys! See page 70.

Like other Russwin keyways, this multiplex group changed its name for 5-pin, 6-pin and 7-pin variations. This practice was stopped in 1993 to conform to a single standard name for each keyway.

Since 5-pin was the most common, Corbin Russwin has standardized on the names 981, 982 and 983 for these keyways. The old names are shown for reference only, together with the bitting prefixes.

Caution: 5-pin cylinders used a "guard pin" in the 6th chamber for many years, requiring a #4 cut in the 6th position of 5-pin keys. If you do not make the guard cut on the key, it will not work in a cylinder with a guard pin.

HIGH SECURITY
NOT AVAILABLE



Bitting Prefixes

5-pin		6-pin		7-pin	
R	981	V	~~961~~	L	~~971~~
S	982	W	~~962~~	1L	~~972~~
T	983	X	~~963~~	2L	~~973~~
RS	9812	VW	~~9612~~	L1L	~~9712~~

Russwin 852 Class

852 was Russwin's stock keyway from about 1912 to 1938, following 752 and followed by 981.

252 is used to extend master key systems established on 852. 5-pin is standard and 6-pin is rare. G is a very rare simplex keyway. G keys are available 5-pin only.

The shallowest cut is normally a 0 and the deepest is a 6. However, a B depth is possible above the 0 to extend exhausted systems.

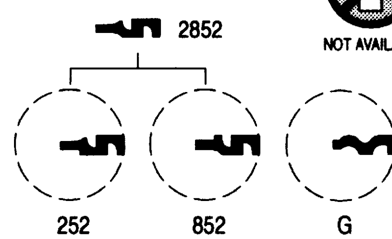
No new systems are generated in 852 Class keyways. They are supplied only to support existing systems.

The keyways in the 852 Class have their own bitting and pin length specifications. See page 71.

Caution: 5-pin cylinders used a "guard pin" in the 6th chamber for many years, requiring a #4 cut in the 6th position of 5-pin keys. If you do not make the guard cut on the key, it will not work in a cylinder with a guard pin.

5-pin standard, 6-pin special.

HIGH SECURITY
NOT AVAILABLE



Bitting Prefixes

252	2
852	8
2852	28
G	G

Russwin 750 Class (obsolete)

This simplex keyway was Russwin's first pin tumbler keyway for mortise cylinders, dating from around 1899. It used 5 cuts with *special spacing* on a 7-pin blank (see page 75.)

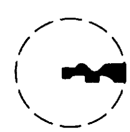
A normal length version was used for early rim cylinders. It was called 751, not to be confused with the 751 keyway used recently for residential knob locks. Both 750 and 751 had a diamond shaped bow and are now obsolete.

Russwin 752 Class

752 was Russwin's stock keyway from shortly after 1900 until 1912, following 750/751 and followed by 852. In 1961, the keyway was resurrected as Safe Hardware's stock keyway (KB7525) until Safe was closed in 1981. 752 originally had a cloverleaf bow. Safe used it with round and oval bows. See page 73 for key bitting specs.

Available 5-pin only.

HIGH SECURITY
NOT AVAILABLE



750, 751, 752

Bitting Prefixes		First Cut
752	7	.250"
750	J	.481"
751	H	.245"

Russwin N Series Obverse Keyways (Inactive)

These keyways became inactive for new jobs in 1993. The obverse keyways were introduced about 1938 to replace the A Series keyways and roughly paralleled the use of 981 as Russwin's stock keyway.

These old multiplex keyways weren't designed with the logic of today's keyways. Multi-section keys were obtained simply by double, triple or quadruple milling key sections onto the same blank, which often allowed key sections to enter additional keyways for which they were not intended.

An engineering study of these keyways in 1969 lead to the schematics shown here for the final years of new N Class keying systems. Older systems in the field will not necessarily adhere to this structure. The Key Records Department should always be consulted before attempting to introduce a new keyway into an existing system.

Caution:
Do not use DH Class specs to cut N Class keys or pin N Class cylinders!

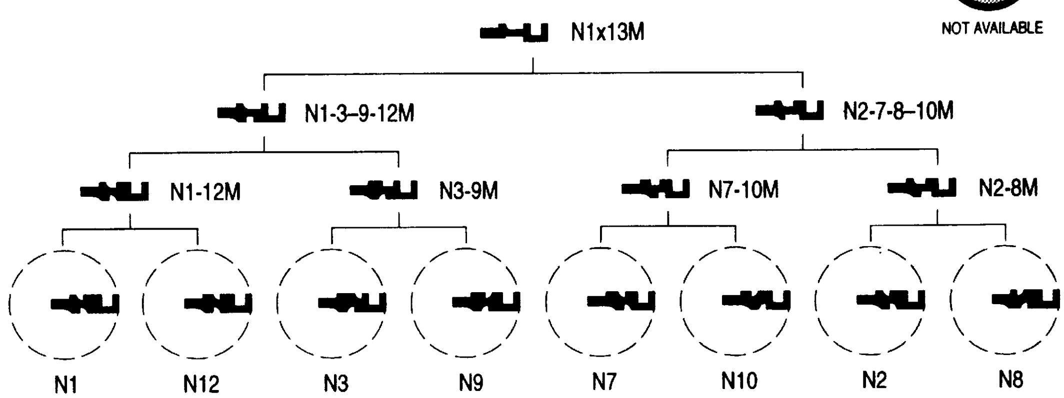
HIGH SECURITY

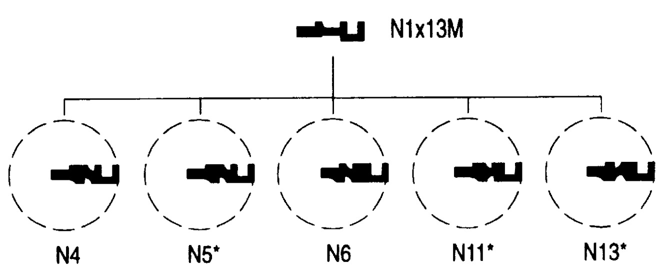


NOT AVAILABLE

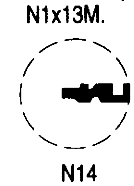
Available 5, 6 and 7-pin
N Class bitting (pages 68 and 69)
Reverse of N15 – N28
No new keying systems.

Former Designations:
1N – 14N 6-pin
1K – 14K 5 and 7-pin





Simplex Keyway not entered by N1x13M.



* **Caution:** Do not use these pairs in the same keying system with each other:

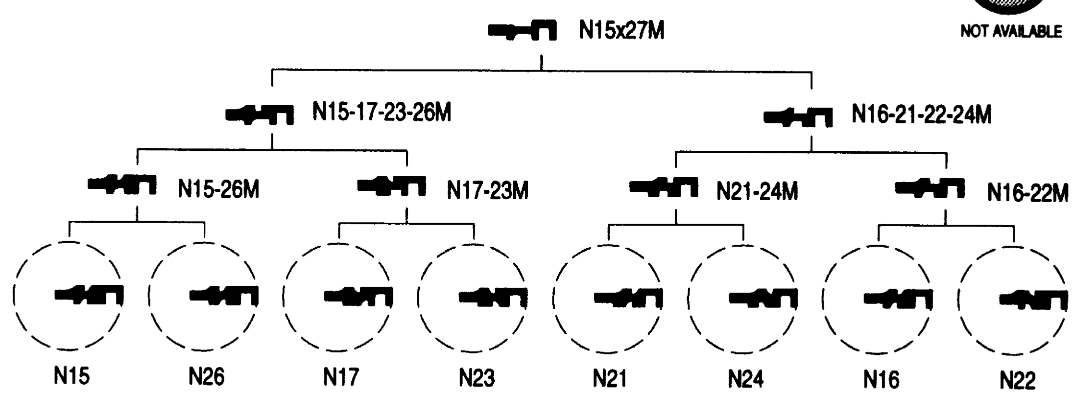
N1 with N13
N3 with N5
N7 with N11

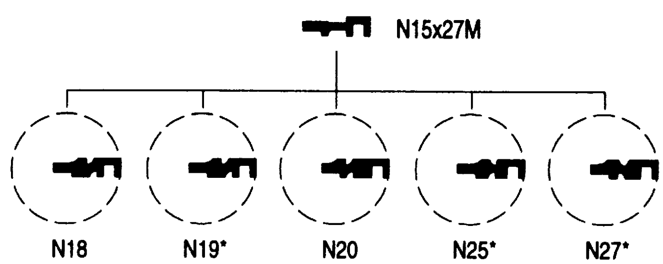
Russwin N Series Reverse Keyways (Inactive)

HIGH SECURITY
NOT AVAILABLE

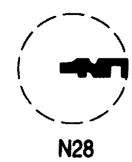
Available 5, 6 and 7-pin
N Class bitting (pages 68 and 69)
Reverse of N1 – N14
No new keying systems.

Former Designations:
15N – 28N   6-pin
15K – 28K   5 and 7-pin





Simplex Keyway not entered by N15x27M.



* **Caution:** Do not use these pairs in the same keying system with each other:

N15 with N27
N17 with N19
N21 with N25

Russwin A Series Keyways (Inactive)

These keyways were used for special or very large jobs from about 1907 to 1938, during the time when 752 and later 852 were Russwin's stock keyways.

These keyways were not designed with the logic of today's keyways. Multi-section keys were obtained simply by double, triple or quadruple milling key sections onto the same blank, which often allowed key sections to enter additional keyways for which they were not intended.

Illustrated here are the most secure multiplex relationships among the obverse keyways by today's standards. Older systems may not adhere to this structure. The reverse keyways are quite rare and were seldom used in multiplex key systems. The Key Records Department should always be consulted before adding a new keyway into an existing system.

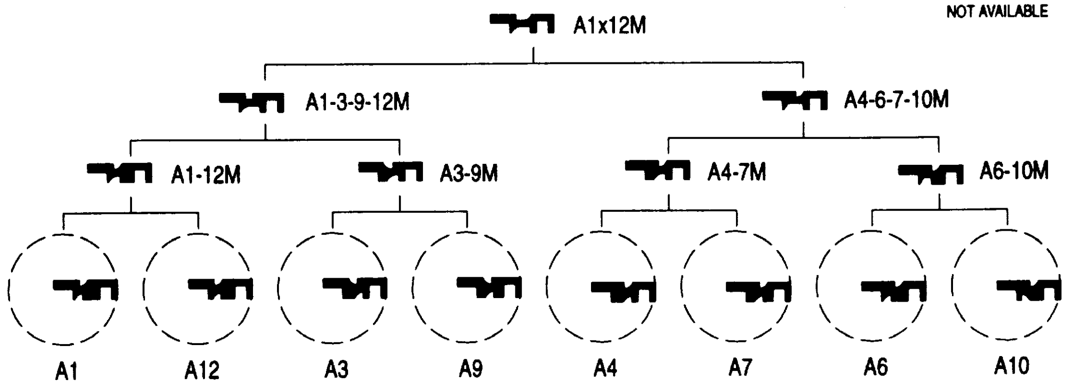
These keyways use seven depths. 0 is the shallowest and 6 is the deepest. The increment is .020".

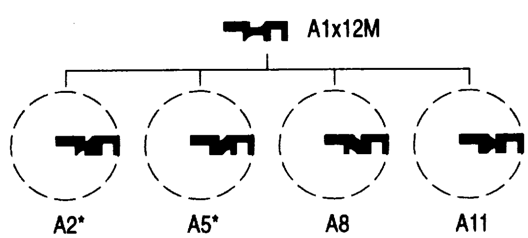
Caution: 5-pin cylinders used a "guard pin" in the 6th chamber for many years, requiring a #4 cut in the 6th position of the 5-pin keys. If you do not make the guard cut on the key, it will not work in any cylinders with a guard pin.

HIGH SECURITY
NOT AVAILABLE

Available 5, 6 and 7-pin
A Class bitting (page 72)
Obverse: A1 – A12
Reverse: A13 – A24
No new keying systems.

Former Designations:
1A – 24A 5-pin
1Z – 24Z 6-pin

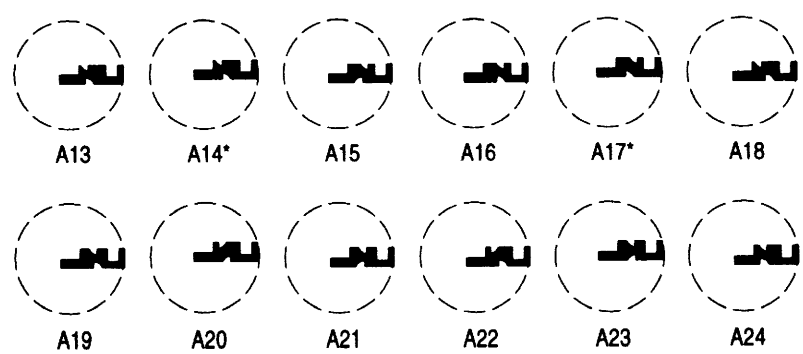




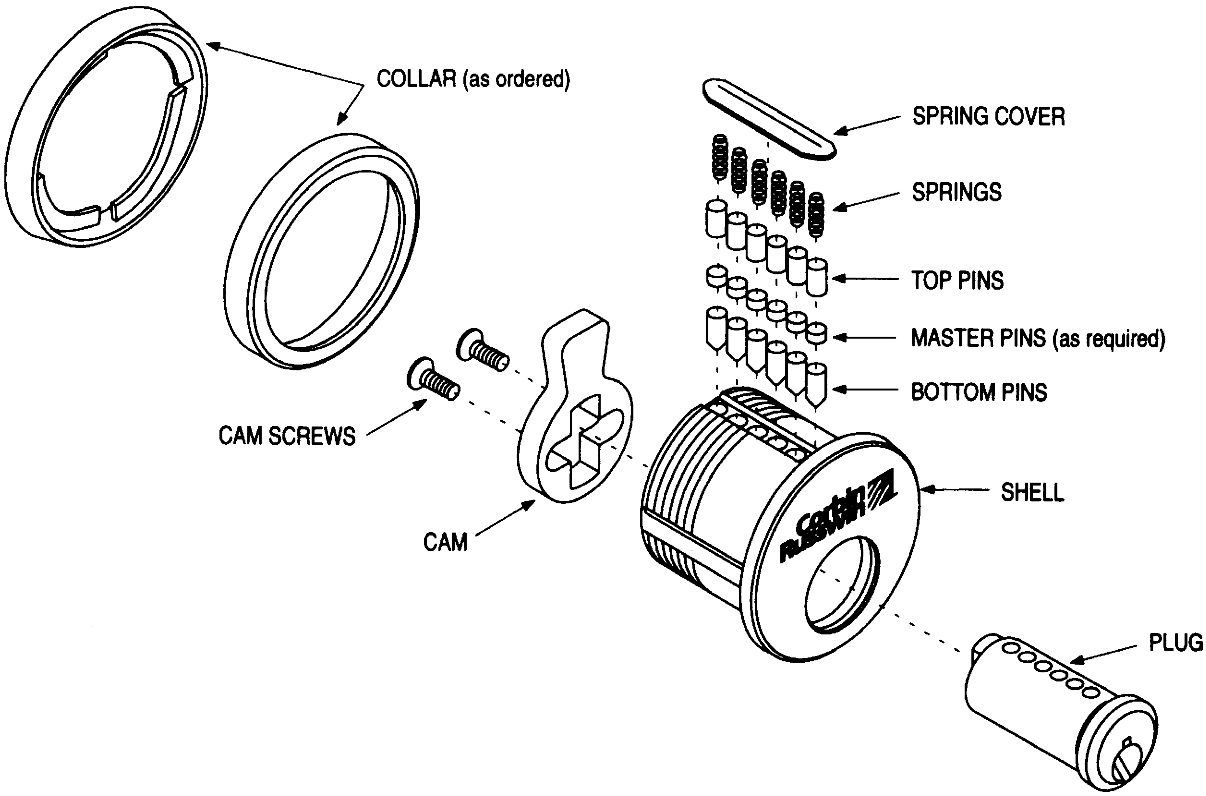
* **Caution:** Do not use these pairs in the same keying system with each other:

A1 with A2
A4 with A5
A13 with A14
A16 with A17

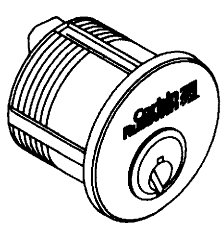
Reverse Keyways



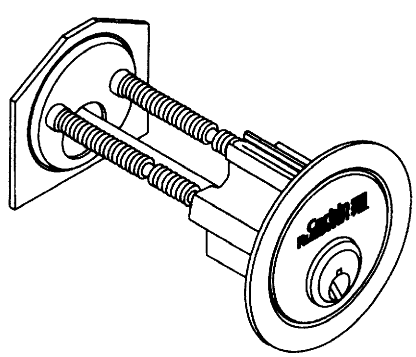
Basic Cylinder Terminology and Construction



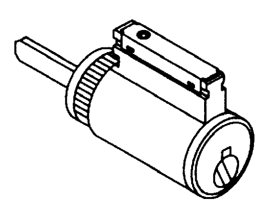
Basic Cylinder Types



Mortise Cylinder
This type of cylinder screws into a mortise lockset and is held in place by a set screw which engages the V-notch on one side of the cylinder. In exit device trim, it may be secured with a nut from the back.



Rim Cylinder
This type of cylinder is fastened by the two mounting screws and a back plate. It is most often used on rim and vertical rod exit devices.



Key-In-Knob Cylinder
This type of cylinder comes in a wide variety of sizes and shapes. It is found in some deadlocks in addition to key-in-knob and key-in-lever locksets.

Combinating Conventional Cylinders

Of the many types of cylinders covered in this manual, this is the simplest in construction and servicing. Its principles should be mastered before continuing to the more complex mechanisms.

The exploded view shows a mortise cylinder but there are many other shapes of cylinders to which this section applies. Rim cylinders and key–in–knob cylinders are the most common other shapes.

These cylinders do not require any special attention to the size of the top pins. A .171" length is used in all chambers of all conventional cylinders and will be symbolized by the letter "T" for "top". The spring used for conventional cylinders is 493F29.

The most convenient way to combinate conventional cylinders requires a tool called a *plug follower.* Followers for both diameter plugs are contained in Corbin Russwin pin kits and tool kit CT–93. They can also be ordered separately. See the catalog for current products and ordering information.

Have the bittings (key combinations) written out for all keys which are to operate the cylinder you are combinating. These may come from the bitting list, from numbers stamped on the key bows or from measurements using a key gauge or other measuring device. Never file pins or plugs! Cylinders should be combinated by the numbers, rather than by trial and error.

Example:

> **Caution:**
> Filed or otherwise damaged plugs should be replaced. See Appendix D for part numbers.

Name of Key	**Symbol**	**Symbol**					
Great Grand Master Key	GGM	**1**	**2**	**3**	**4**	**6**	**4**
Grand Master Key	A	3	2	3	4	6	4
Master Key	AJ	3	4	3	4	6	4
Change Key	AJ3	**3**	**4**	**5**	**2**	**2**	**2**

Normally, if you combinate a cylinder to the top master key (abbreviated "TMK") and the change key, all other keys will operate automatically. This is because all intermediate level master keys will be made up entirely of cuts from the TMK or change key. In the example above, notice that each cut of A and AJ is found either in AJ3 or GGM. Your job is now simplified because you only need to look at two key bittings: those of AJ3 and GGM.

Great Grand Master Key	GGM	1	2	3	4	6	4
Change Key	AJ3	3	4	5	2	2	2

Some keying systems use selective master keys such as ENG (engineer's key), MAIN (maintenance key), JAN (janitor's key) etc. which will have one cut different from the TMK. If that key is also to operate, then its (one) special cut must be added to the numbers you write down:

Great Grand Master Key	GGM	1	2	3	4	6	4
Engineer's Key	ENG	1	6	3	4	6	4
Change Key	AJ3	3	4	5	2	2	2

In very rare cases, one of the intermediate master keys will indeed have a cut not contained in the TMK or change key. If you find this to be the case, that unique cut must also be considered. However, beware that, unless this rare case is taken from a factory generated bitting list, chances are that it is an error in your keying system and will result in key interchange!

Great Grand Master Key	GGM	1	2	3	4	6	4
Master Key	AJ	3	4	5	4	6	4
Change Key	AJ130	3	4	1	2	2	2

Combinating Conventional Cylinders

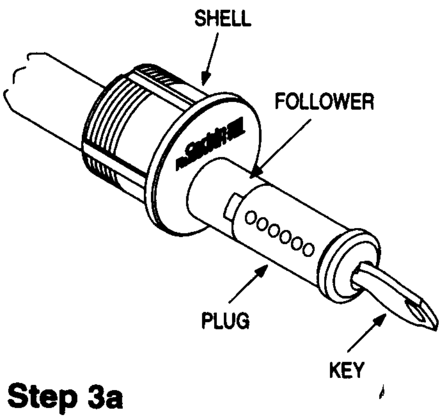
Once you have determined all bittings, you are ready to proceed with the mechanics of cylinder combinating.

Step 1

Remove the plug retainer. In a mortise cylinder, this will be the cam screws and cam. Key-in-lever cylinders use a threaded cap which can be unscrewed while depressing its spring loaded detent pin. Most other cylinders use a C-clip or Waldes ring.

Step 2

Select the proper diameter follower (.509" or .552".) Insert a proper operating key and turn the plug about 45° in either direction. Place the follower against the back of the plug and gently push the plug out of its shell. The follower then holds all top pins and springs in the shell.



Step 3a

If you are rekeying a stock cylinder, you do not need to disturb the top pins and springs in the shell unless you are keying it to a 5-pin key and the cylinder came with 6-pin keys, or vice-versa. In that case, gently push the follower forward from the back end of the shell until the back chamber is exposed. Install or remove the top pin and spring. Then push the follower from the front end of the cylinder to re-center the shell on it and set it aside while you load the pins into the plug.

Step 3b

If you are rekeying a cylinder which is already master keyed, *you must clear all master pins from the shell.* Use a small (1/8") flat blade screwdriver or similar tool. From either end of the shell, push the follower inward slowly. As the first pin becomes exposed, press the screwdriver against it so it cannot escape. When the follower completely clears the pin, carefully ease up on the screwdriver to allow the spring to push the pin outward from its chamber.

If any master pins are in this chamber, you will see them at this point. Allow them to move out while keeping the top pin in the shell.

Each chamber must be probed. More than one chamber may contain a master pin and more than one master pin may be found in a chamber. Practice will allow you to rid the shell of all master pins quickly, chamber by chamber, while keeping the top pins and springs in place.

When you get midway into the shell it will become more difficult because you have to hold all the front pins in place and still see the material in the next chamber being exposed. When you reach this point, push the follower back toward you and proceed from the opposite end of the shell for the remaining pin chambers.

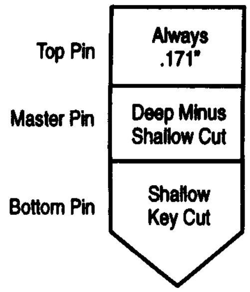
Be sure to identify weak springs or gummed up pins and replace so the cylinder will operate properly.

Step 4

Determine whether your key bittings are bow to tip (all System 70 and Russwin) or tip to bow (Pre-System 70 Corbin only). This determines from which end the pins will be loaded into the plug. We will assume a System 70 example bow to tip.

Step 5

Determine the bottom pin and master pin number for each chamber.



The bottom pin always equals the shallowest cut. Sometimes it will be in the TMK and sometimes it will be on the change key. **The master pin equals the difference between the deep and shallow cuts.** Remember, the top pins are a uniform .171" length and are already in the shell.

The following represents the pin stacks for our 6-pin example cylinder AJ3. The shallow key cut for each position is indicated in bold type.

TMK	**1**	**2**	**3**	4	6	4
Change Key	3	4	5	**2**	**2**	**2**
Top Pin	T	T	T	T	T	T
Master Pin	2	2	2	2	4	2
Bottom Pin	1	2	3	2	2	2

Step 6

If you are using a pin kit arranged by pin numbers, this completes the job. *Leave the keys out of the plug.* Load the pins into the chambers of the plug, remembering whether you are working bow to tip or tip to bow. If you only have a 5-pin system, you will be leaving the 6th chamber empty in both the plug and shell.

If you are using a pin kit with actual lengths in thousandths of an inch, you must refer to the one page of Appendix A that applies to *your* particular keying system. Convert the numbers to lengths and load the plug.

Combinating Conventional Cylinders

For our example we will assume our keying system is Z Class System 70. We will also assume the plug diameter of our cylinder to be .509". Referring to page 46 we can determine the actual lengths of pins to load.

Top Pin	T	T	T	T	T	T
Master Pin	2 .056"	2 .056"	2 .056"	2 .056"	4 .112"	2 .056"
Bottom Pin	1 .160"	2 .189"	3 .217"	2 .189"	2 .189"	2 .189"

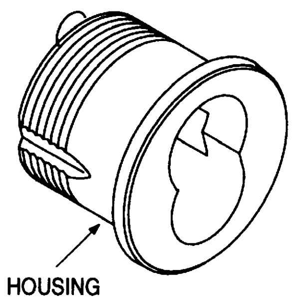
Step 7

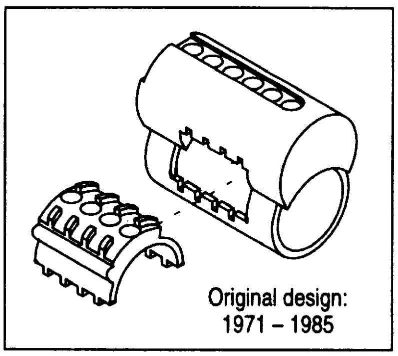
Apply a tiny amount of powdered graphite to each chamber over the pins and carefully slide the loaded plug back into the shell, pushing the follower out as you go. Be sure the plug is turned about 45°! Otherwise the top pins and springs will shoot into the plug, locking it part way into the shell. If this happens, the spring cover must be removed and the appropriate chambers emptied to correct the problem.

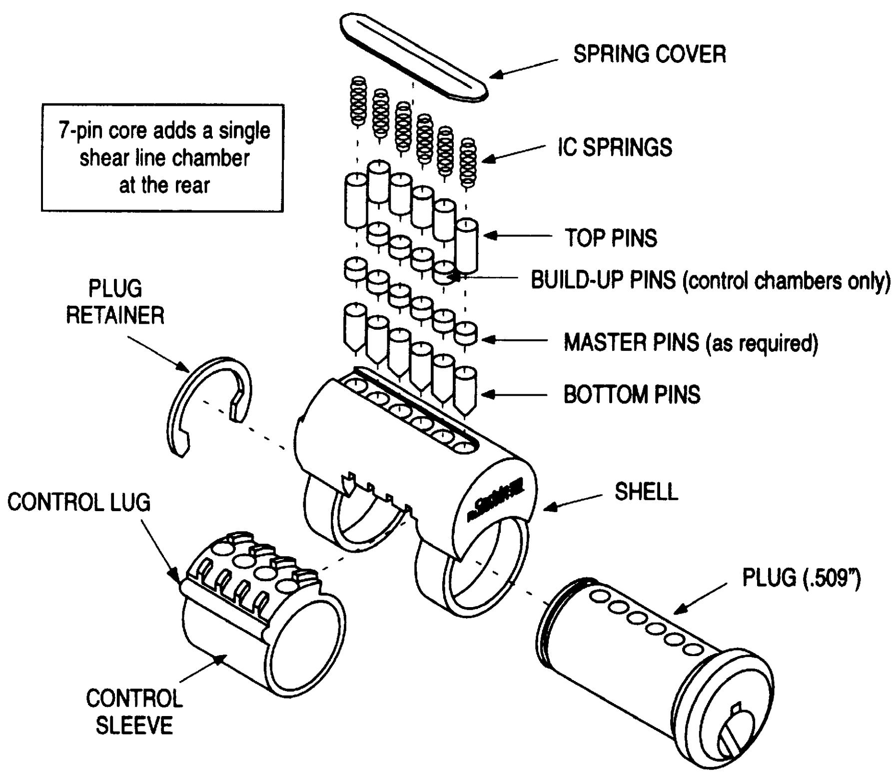
Step 8

Turn the *fully inserted* plug to the 12 o'clock position and allow it to lock. Test each key for smooth operation. *Be careful when removing keys. The plug is still free to come out, losing your work.* Place the tips of your finger and thumb against the plug face and "pinch" the keys out after testing. If all keys operate, install the cam or plug retainer and test any *one* key for smooth plug rotation, to be sure the retainer does not bind.

Combinating Interchangeable Core




Original design:
1971 - 1985



This core was introduced in 1971 and is available in *all* Corbin Russwin keyways.

Notice from the exploded view that only the four center pin chambers have a separate shear line for the operation of the control key. These will be referred to as the *control chambers* and the others as *non-control chambers* throughout this text. This is an important distinction because the two types of chambers are combinated differently.

Top pins in the control chambers vary in length and will be assigned different numbers. However, non–control chambers always use a .247" top pin which will be symbolized by the letter "T" for "top". The tumbler spring is different from that of conventional cylinders. Its number is 172F21-7.

The spring's strength and number of coils are designed to work with the top pins specified by the factory for proper operation. If you do not use original Corbin Russwin springs, you may need to adjust the length of the top pins accordingly.

Cores may either be serviced by removing the spring cover and top loading or by removing the plug and using a follower. The latter method is covered earlier under the servicing of conventional cylinders.

Control Key for 0-Bitted Cores

See Appendix A for bitting specs and use System 70 depths where available.

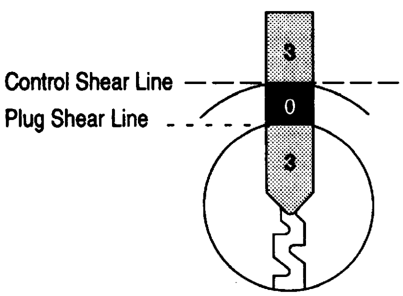
Control = 113311

Combinating Interchangeable Core

Control Chamber Mechanics
Combinating your first interchangeable core is more difficult if you don't understand the mechanics of the core.

Corbin Russwin cores use plus (+), minus (–) and zero (0) build-up pins. This may seem unusual if you are used to combinating other brands of interchangeable cores, but it actually makes the pin stacks much easier to determine. There is less math (fewer steps) and after some practice, it is much easier to do in your head without writing anything down.

In a control chamber there are two shear lines. All operating keys operate down at the plug. Only the control key operates at the higher shear line. To simplify our first examples, we won't do any master keying. There will be just one operating key and one control key.



Control = 3
Operating = 3

In the first example, we have an operating key with a #3 cut. Obviously, that requires a #3 bottom pin.

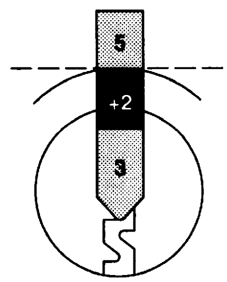
The control key is also a #3. When the control key is inserted, the bottom pin is at the plug shear line because the operating key is also a #3.

We need something called a *build-up pin* to add enough material into the chamber to allow a shear line up where the control key operates.

Since both keys have #3 cuts, we need the build-up pin to be exactly long enough to span the distance from the plug shear line to the control shear line. No longer; no shorter.

The pin which spans exactly that distance (.163") is called a size "zero" pin because it is used when there is zero difference between the control key cut and the total loaded into the plug. In this case, the control key is 3 and there is a 3 bottom pin in the plug. 3 – 3 = 0.

The top pin is always the same as the control key itself, 3. No additional adding or subtracting is necessary to determine the top pin.



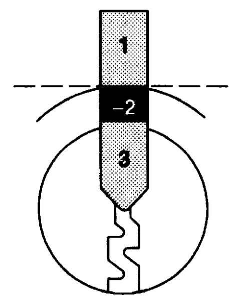
Control = 5
Operating = 3

In the second example the operating key is still a #3 cut but we've made the control key deeper: #5.

When the control key is inserted, the #3 bottom pin falls below the plug shear line but the top end of the build-up pin still must reach up to the control shear line. To do this, the build-up pin must be longer than zero.

When the pin is longer than zero, it gets a plus (+) sign. In this case, it is longer by two increments. Control – plug total = build–up pin. 5 – 3 = (positive) + 2.

Again, the top pin is easy because it's the same as the control cut: 5.



Control = 1
Operating = 3

The last example shows what happens when the control key is shallower than the plug total.

We still have a #3 bottom pin for the operating key but we changed our control key to a #1 depth. When the shallower control key is inserted, it pushes the #3 bottom pin up past the plug shear line.

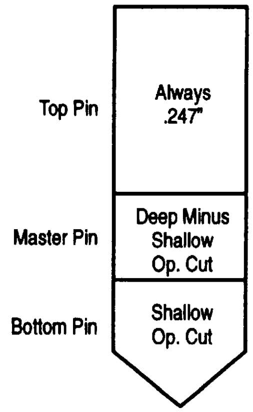
Since the top end of the build-up pin must stop at the control shear line, we need a build-up pin which is shorter than zero, in this case by two increments. It is a –2 size.

Confirming this with the formula, control minus plug total = build–up pin. 1 – 3 = (negative) –2.

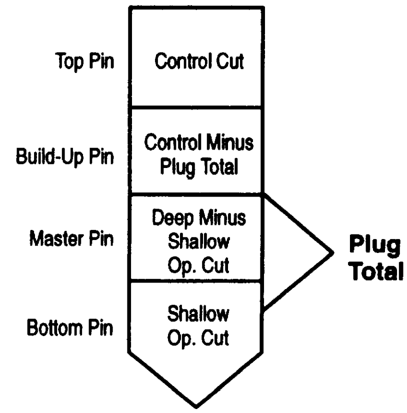
As always, the top pin is the same size as the control cut: 1.

Combinating Interchangeable Core

Non-Control Chamber Pin Stack
Spring 172F21-7



Control Chamber Pin Stack
Spring 172F21-7



We can now proceed to master keyed cores. Reviewing the exploded view shown earlier, remember that the front and back pin chambers are *non*-control chambers. There is no build-up pin and the top pin is always a .247" without a numerical size. All the examples on the previous page were control chambers.

The bottom pin and master pin are determined the same way for every pin tumbler cylinder in the world: The bottom pin matches the shallower operating key cut and the master pin is the difference between the deeper and shallower cut.

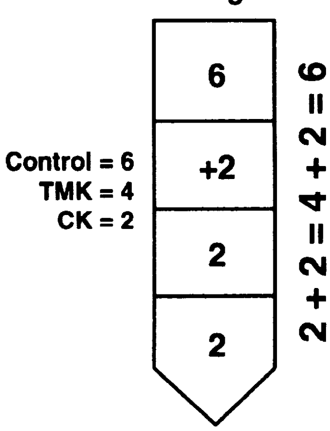
Beware of 0!
When determining a Pre-System 70 pin stack, beware that Corbin differs from Russwin in its use of the numeral "0" in a key combination and bottom pin length. In Russwin, it is the shallowest cut and shortest pin: *zero*. In Corbin, it is the deepest cut and longest pin: *ten*. For build-up pins, however, it's *always zero*.

When determining the build-up pins for control key operation we need to introduce a new term: *plug total*. When you add the bottom pin to any master pin(s) you get the plug total; the total number of "units of stuff" in the plug.

To review, Corbin Russwin build-up pins are determined by subtracting the plug total from the control cut. The top pin size is the same number as the control cut. See below.

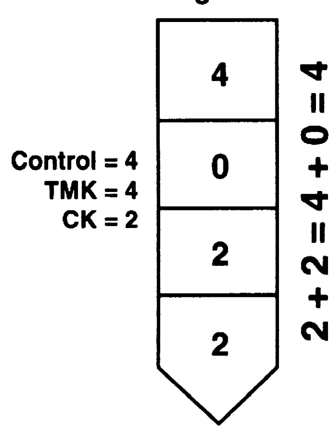
Example 1: When the control cut is deeper than the deepest operating cut, a "plus" build–up pin results: Control = 6, change key = 2 and top master key (TMK) = 4. The plug total is 4 (master pin + bottom pin). The build-up pin is +2 (control – plug total = build-up pin).

Control Cut Deeper Than Plug Total



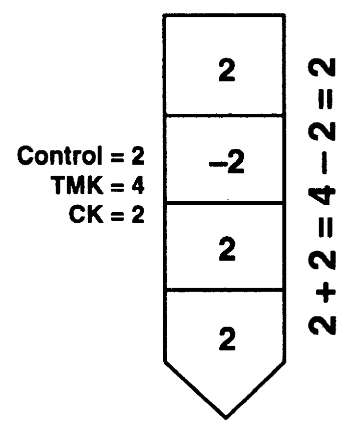
Example 2: There is a 0 build-up pin. When the control cut is the same as the plug total, the difference is zero, so a 0 build-up pin is required. (Control – plug total = build-up pin.)

Control Cut Equals Plug Total



Example 3: When the control cut is shallower than the deepest operating cut, a "minus" build–up pin results. (Control – plug total = build-up pin.)

Control Cut Shallower Than Plug Total



As you pin a chamber from the bottom up, notice that all pins add and/or subtract together to equal the control key bitting at the top. You will build up considerable pinning speed if you pin every chamber by thinking of the math from the bottom up.

Combinating Interchangeable Core

Have the bittings (key combinations) written out for all keys which are to operate the core you are combinating. These may come from the bitting list, from numbers stamped on the key bows or from measuring with a key gauge or calipers. Cylinders should be combinated by these numbers, rather than by trial and error. Never file pins or plugs in any type of cylinder.

Name of Key	Symbol	Symbol
Control Key	CTR	1 2 3 6 3 4 (Middle 4 have their own shear line.)
Great Grand Master Key	GGM	1 2 3 4 6 4
Grand Master Key	A	3 2 3 4 6 4
Master Key	AJ	3 4 5 4 6 4
Change Key	AJ3	3 4 5 2 2 2

Normally, if you combinate a cylinder to the control key, TMK and change key, all other keys will operate automatically. This is because all intermediate level master keys are made up entirely of cuts from the TMK or change key.

In the example above, notice that each cut of A and AJ is found either in AJ3 or GGM. Your job is now simplified because you only need to look at two key bittings when determining the bottom pin and master pin: those of AJ3 and GGM.

Remember that the control key operates at its own shear line only in the middle chambers. We use build–up pins to allow the control key to reach that shear line in those positions. We disregard the control key bittings in the non-control chambers because they are the same as the TMK. We are left with these bittings to consider when combinating the core.

Control Key	CTR		2	3	6	3	
Great Grand Master Key	GGM	1	2	3	4	6	4
Change Key	AJ3	3	4	5	2	2	2

Some keying systems use selective master keys such as ENG (engineer's key), MAIN (maintenance key), JAN (janitor's key) etc. which will have one cut different from the TMK. If that key is also to operate, then its (one) special cut must be added to the numbers you write down.

In very rare cases, one of the intermediate master keys will indeed have a cut not contained in the TMK or change key. If you find this to be the case, that unique cut must also be considered. However, beware that, unless this rare case is taken from a factory generated bitting list, chances are that it is an error in your keying system and will result in key interchange!

Once you have determined all bittings, you are ready to proceed with the mechanics of cylinder combinating. The recommended method of servicing interchangeable cores is by top loading, rather than by using a plug follower.

Step 1

Determine whether your key bittings are bow to tip (all System 70 and Russwin) or tip to bow (Corbin Pre-System 70 only). This determines from which end the pins will be loaded into the plug. We will assume a System 70 example, bow to tip.

Step 2

Remembering that there are control chambers and non–control chambers, select the pin numbers based on whether you're combinating a control chamber or not.

The process is described on the next page.

Combinating Interchangeable Core

Step 3a

Combinate the complete core by the numbers. If you are using a pin kit arranged by pin numbers, load the pins into the chambers, remembering whether you are working *bow to tip* or *tip to bow*. If you only have a 5-pin system, leave the 6th chamber empty. If you have 7-pin cores, the 7th chamber is a non–control chamber, so it is combinated with the same logic as chambers 1 and 6.

Control	1	2	3	6	3	4
TMK	1	2	3	4	6	4
Change Key	3	4	5	2	2	2
Top Pin	T	2	3	6	3	T
Build-Up Pin		–2	–2	+2	–3	
Master Pin	2	2	2	2	4	2
Bottom Pin	1	2	3	2	2	2

Step 3b

If you are using a pin kit with actual lengths in thousandths of an inch, you must convert these numbers to thousandths. Refer to the one page of Appendix A that applies to your particular keying system. For our example we will assume our keying system is Z Class System 70. The plug diameter of the core is .509". Referring to Appendix A we can determine the actual lengths of pins to load.

Top Pin	T .247"	2 .163"	3 .135"	6 .080"	3 .135"	T .247"
Build-Up Pin		–2 .107"	–2 .107"	+2 .218"	–3 .080"	
Master Pin	2 .056"	2 .056"	2 .056"	2 .056"	4 .112"	2 .056"
Bottom Pin	1 .160"	2 .189"	3 .217"	2 .189"	2 .189"	2 .189"

Step 4

Apply a *tiny* amount of powdered graphite to each chamber over the pins.

Step 5

Hold the springs down and test all keys.

Step 6

Stake the spring cover on.

Key Bitting Array

Control				6	3	
TMK	1	2	3	4	6	4
	2	3	4	5	1	5
	3	4	5	1	2	6
	4	5	6	2	4	1
	5	6	1	3	5	2
	6	1	2			3

Master Keying Rules

If the IC keying system was set up by the factory, certain relationships will exist between the control key and the top master key (TMK.)

Rule 1: The control bitting must be identical to the TMK bitting except for two positions.

Rule 2: The two positions which are different must fall within the range of positions 2 through 4, because those are the control chambers.

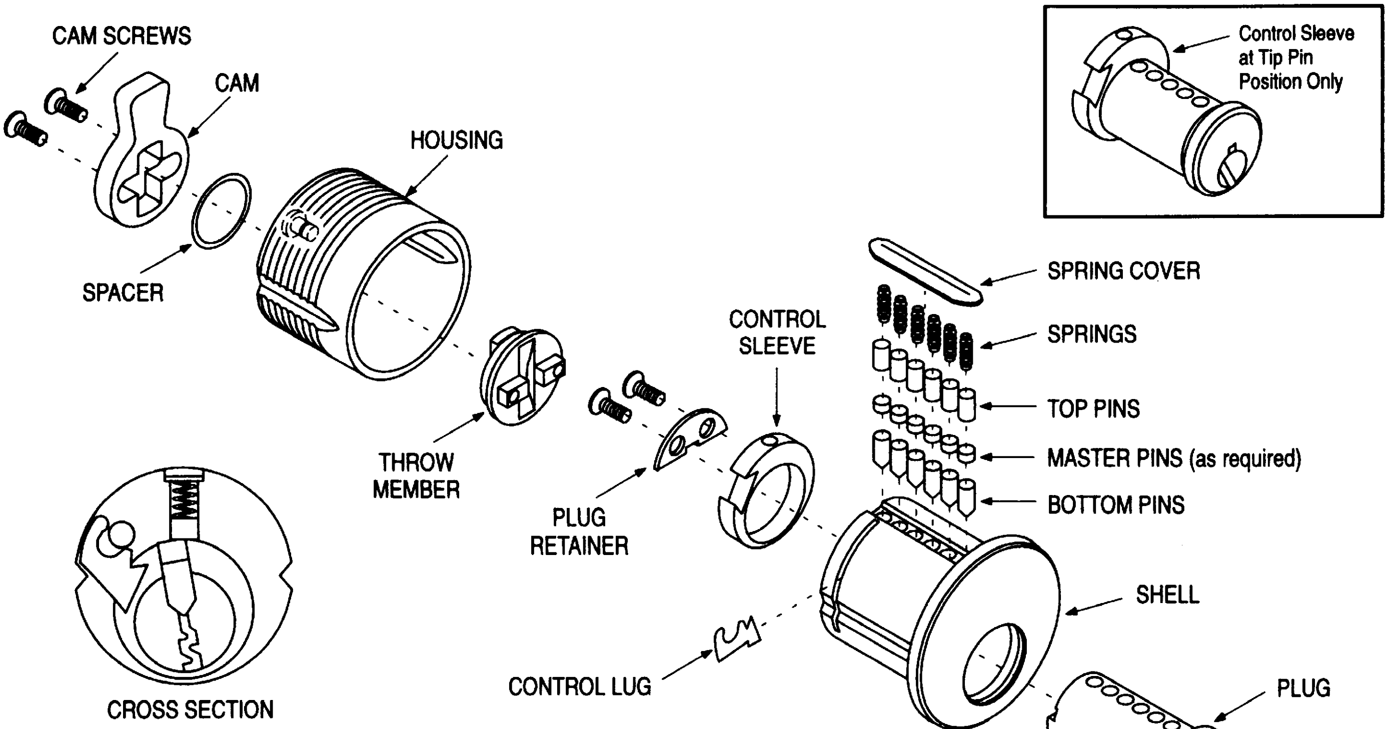
Rule 3: If high security cylinders are integrated, the two differing positions must be chambers 2 and 3, because those are the only control chambers in the high security core. Page 32 is devoted to high security IC.

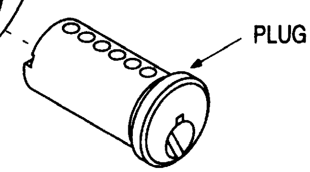
Rule 4: The two bittings which make the control key different must not be used in the progression of the system. Otherwise, the control key will align at the operating shear line as well as the control shear line and it will jam.

Rule 5: In System 70, do not use a #1 cut in the control positions of the control key. No build-up pin is available to allow a #6 cut to operate under it.

The factory occasionally deviates from these rules to accommodate special situations. However, if you are servicing a system where any of these rules are broken, faulty combinations have probably been added into it.

Old Round Interchangeable Core





History

This cylinder was made between 1964 and 1971. The line consisted of 5 and 6-pin rim and mortise cylinders. Cores were interchangeable between them, provided the number of pins was the same.

Combinating a Core

The plug diameter is .509", regardless of the key class. Use the same build-up and top pins in the control chamber of this core as you use in the control chambers of the modern figure-8 core. All other chambers use a standard .171" top pin.

Master Keying Rules

If you must rekey a system of these cylinders, there are special rules to follow. This system pre-dates System 70, so all rules and examples are given in the old 10 depth system.

Rule 1: Select the TMK and control bittings to be identical in all **but** the control position at the tip.

Rule 2: TMK: The deepest cut possible at the tip of the key is preferred.

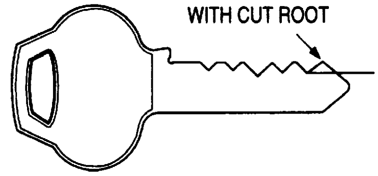
Rule 3: Control key: Tip cut preferably 3 increments shallower than TMK:

Russwin D, H and N	CTR	xxxxx6
	TMK	xxxxx9
Russwin 981 Class	CTR	xxxxx5
	TMK	xxxxx8
Corbin (Tip to bow!)	CTR	7xxxxx
	TMK	0xxxxx

Rule 4: Change key: Tip cuts **minimum** 2 steps away from the control cut.

Rule 5: Don't use either of the last two chambers for construction master keying.

Rule 6: Remove the steeple after any cut in the last position which is deeper than the control key. This prevents operating keys from removing the core.



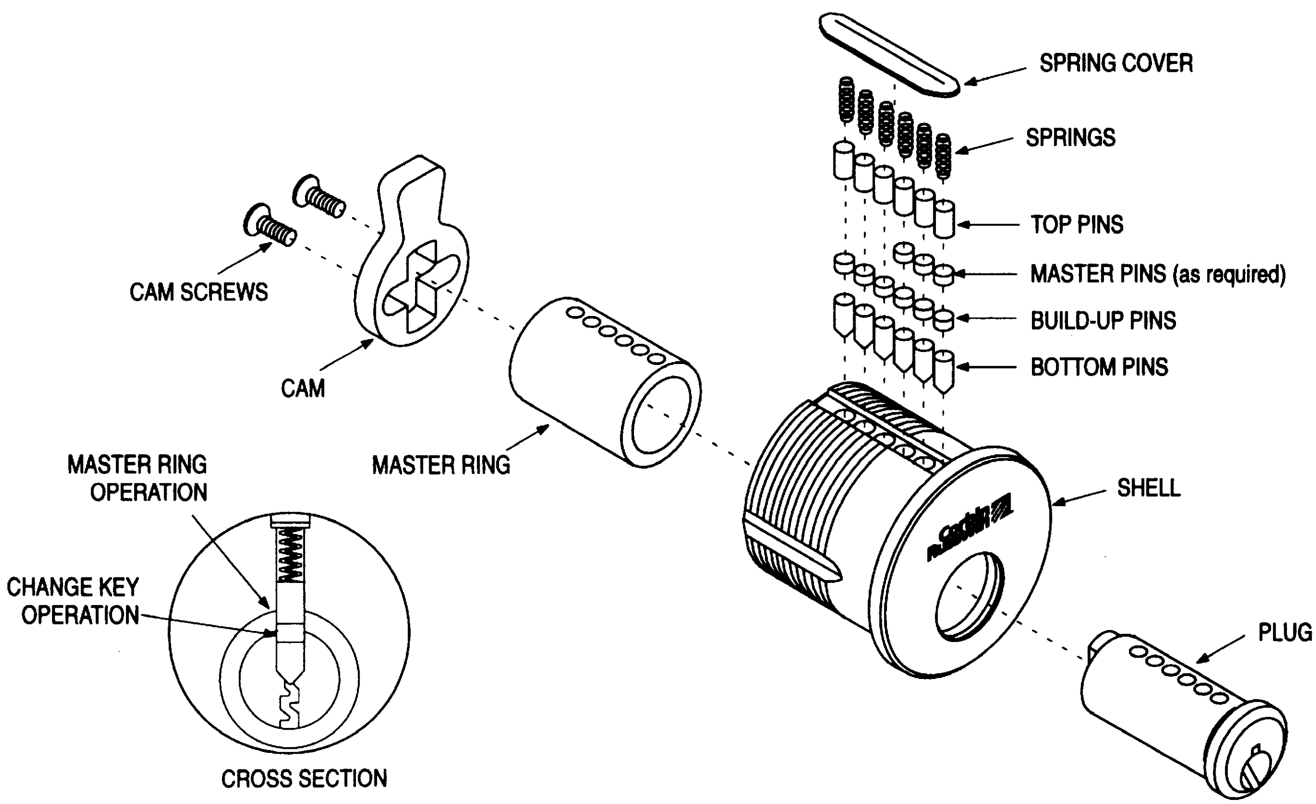
Limitations

When setting up a keying system for these cylinders, the key bitting array (KBA) only has three progression possibilities in the control chamber.

There are only three possible paradigms for each of the three key classes used with these cylinders:

		Corbin	981	D, H, N
①	Control	7	5	6
	TMK	0	8	9
	Progression Possibilities	1	B	0
		3	1	2
		5	3	4
②	Control	3	1	2
	TMK	0	8	9
	Progression Possibilities	1	B	0
		6	4	5
		8	6	7
③	Control	5	3	4
	TMK	0	8	9
	Progression Possibilities	1	B	0
		3	1	2
		8	6	7

Master Ring



History

The master ring cylinder was patented (#414,720) by Edward O'Keefe, a New York City locksmith, on November 12, 1889. He assigned the patent to P & F Corbin where it became a milestone in the development of master keying.

Operation

Every chamber of the master ring cylinder has two shear lines. Normally, the plug shear line is used exclusively for change key operation and the ring shear line is for master keys of all levels.

Keying Capacity

In conventional cylinders, a strict relationship exists between the cuts of master keys and their change keys. Since the change keys and master keys have separate shear lines in a master ring cylinder, the relationship between them has few constraints.

This freedom results in keying capacity roughly equivalent to adding another pin chamber to a single shear line cylinder. The *theoretical* number of change keys offered by a 6-pin master ring cylinder is similar to that of a 7-pin conventional cylinder.

When System 70 depths were implemented in 1970, it allowed more *theoretical* change keys. Therefore, fewer and fewer new master ring keying systems have been developed since 1970. Master ring advantages were overlooked in this transition, however.

Advantages

Certain factors severely reduce the number of actual change and master keys in a split pin keying system, while master ring systems are much less limited by them:

- number of levels of keying
- construction master keying
- selective master keys

In other words, keying systems with these requirements often have a far greater number of change keys available in master ring, even when compared to System 70 in single shear line cylinders.

Limitations

Not all modern Corbin Russwin hardware supports the larger diameter master ring cylinders, so new master ring keying systems must drive the type of hardware used.

Single shear line cylinders can be integrated into a master ring system, but the areas of their use within the structure of a keying system must be known at the inception of a system.

It is seldom possible to integrate single shear line cylinders into a master ring system after the fact. Doing so normally creates key interchange and/or places limitations on system expansion.

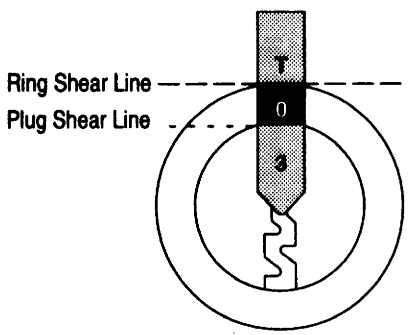
Combinating Master Ring

Master Ring Mechanics

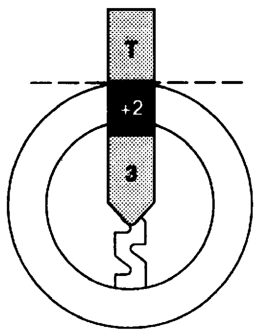
Master ring cylinders are combinated similar to the control chambers of Corbin Russwin interchangeable cores. They require build-up pins with plus (+) and minus (–) values. This may seem unusual at first, but the process is very easy.

Unlike conventional cylinders, master ring cylinders do not use master pins in the plug (unless they are cross keyed). The bottom pins match the change key combination. Only the master level keys (MK, GMK, GGMK, etc.) operate at the higher shear line.

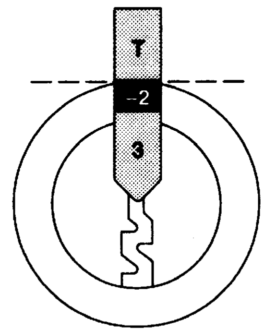
We will illustrate simple master keying first. There will be just a change key and one master key.



Master = 3
Change = 3



Master = 5
Change = 3



Master = 1
Change = 3

In the first example, we have a change key with a #3 cut. That requires a #3 bottom pin.

The master key is also a #3. When the master key is inserted, the bottom pin is at the plug shear line because the change key is also a #3.

We need something called a *build-up pin* to add enough material into the chamber to allow a shear line up where the master key operates.

Since both keys have #3 cuts, we need the build-up pin to be exactly long enough to span the distance from the plug shear line to the ring shear line; no longer and no shorter.

The pin which spans exactly that distance is called a size "zero" pin because it is used when there is zero difference between the master key cut and the total loaded into the plug. In this case, the master key is 3 and there is a 3 bottom pin in the plug. Master minus change key = build-up pin: 3 – 3 = 0.

The top pin does not get a numbered size. It is always .171".

In the second example the change key is still a #3 cut but we've made the master key deeper: #5.

When the master key is inserted, the #3 bottom pin falls below the plug shear line but the top end of the build-up pin still must reach up to the ring shear line. To do this, the build-up pin must be longer than zero.

When the pin is longer than zero, it gets a plus (+) sign. In this case, it is longer by two increments. Master – change key = build–up pin. 5 – 3 = (positive) + 2.

Again, the generic top pin is .171".

The last example shows what happens when the master key is shallower than the change key.

We still have a #3 bottom pin for the change key but we changed our master key to a #1 depth. When the shallower master key is inserted, it pushes the #3 bottom pin up past the plug shear line.

Since the top end of the build-up pin must stop at the ring shear line, we need a build–up pin which is shorter than zero, in this case by two increments. It is a –2 size.

Confirming this with the formula, master minus change key = build-up pin: 1 – 3 = (negative) 2.

As always, the top pin is .171".

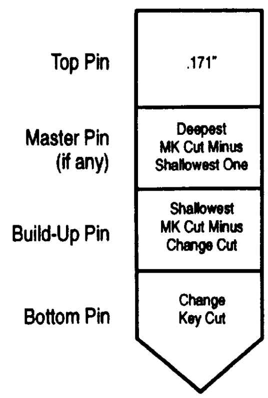
Combinating Master Ring

Grand Master Keying
The previous page demonstrated the mechanics of pinning a cylinder to a master and change key. In reality, master ring cylinders are usually also keyed to grand masters and great grand masters. These will require master pins in some chambers. The master pins must be placed up at the ring, however; not in the plug.

When dealing with different levels of master keys, some cuts of the lowest level master key (e.g. master AA) will be identical to those of the top master key (e.g. the great grand master key). No master pins are added in those chambers of the cylinder. Combinate them as the examples on the previous page showed.

When the master level keys have cuts which are *different* from each other in any position, that chamber requires a master pin. In such chambers, the build–up pin gets the *shallowest* master key(s) to operate up at the ring shear line. The master pin is added to allow the *deepest* master key(s) to operate as well.

This illustration how each pin is determined within a pin stack.



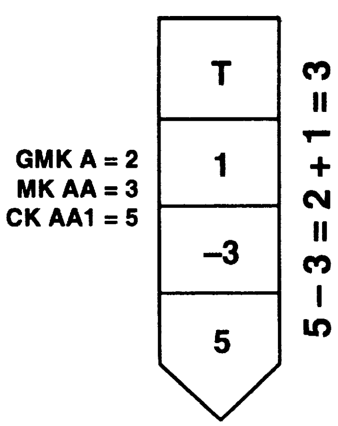
To determine the build-up pin, subtract the change key cut (bottom pin) from the shallowest master cut. The master pin size is the difference (if any) between the deep and shallow master key cuts. The top pin size is a uniform .171" in master ring cylinders.

Beware of 0!
When determining a Pre-System 70 pin stack, Corbin differs from Russwin in its use of the numeral "0" in a *key* combination. In Russwin, it is the shallowest cut: *zero*. In Corbin, it is the deepest cut: *ten*.

A size "0" build-up pin always represents *zero*. Its length matches the thickness of the master ring (.142" or .163", depending on the plug diameter.) This can be confusing with Corbin where 0 represents a *ten* for keys and bottom pins, but a *zero* for build-up pins.

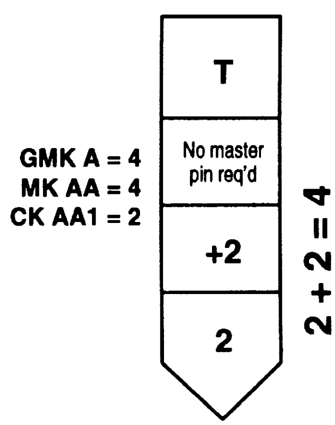
Example 1: When the shallowest master key cut is *shallower* than the change key cut, a "minus" build-up pin results: A = 2, AA = 3 and AA1 = 5. The build-up pin is -3 (GMK minus CK).

Shallower MK is Shallower than CK



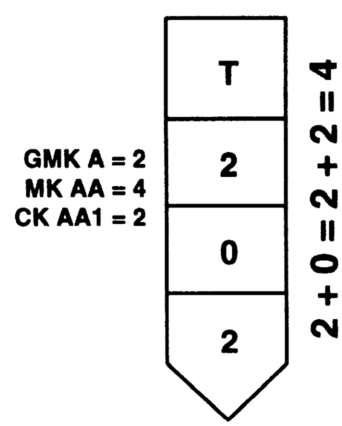
Example 2: When the shallowest master key is *deeper* than the change key, the difference is positive, so a +2 build-up pin is required. Both master keys are the same depth in this example, so no master pin is used.

Shallower MK is Deeper than CK



Example 3: When the shallowest MK cut is the same as the change key cut, a "zero" build-up pin results.

Shallower MK is Same as CK



Combinating Master Ring

The previous examples illustrate individual pin chambers. It is time to combinate a complete 6-pin cylinder.

When we pin conventional cylinders to the top master key (TMK) and the change key, all intermediate level masters usually operate automatically. This is not the case with master ring cylinders. Therefore, *all* key combinations should be written down before combinating a cylinder.

It is highly recommended to draw a horizontal line to visually separate the combination(s) which operate at the plug from those that operate at the ring. This reduces errors.

Since most master ring systems are Pre-System 70, we will not use System 70 for the examples.

Critical Differences Between Corbin and Russwin

Corbin logic only differs from Russwin logic in Pre-System 70, the 10 depth system.

The examples illustrate the difference between Corbin and Russwin when 0 is a digit of a key bitting. Remember, this is the deepest cut in Corbin and the shallowest cut in Russwin.

Also, in Pre-System 70, Corbin is always *tip to bow* while Russwin is *bow to tip*. This becomes critical when loading pins into the cylinder!

The last step is the translation of the pin numbers into the individual sizes in thousandths of an inch.

We will use the Corbin example and specify 57A1 (X Class) keyway. Referring to Appendix A, you will find all the pin lengths for both plug diameters. We will say that our example is a .552" plug cylinder.

Corbin Pre-System 70 Example (0 = Ten)

GGM	3	8	0	9	0	2
A	5	8	0	9	0	2
AA	5	0	4	9	0	2
AA1	5	0	4	3	2	8

Top Pin	T	T	T	T	T	T
Master Pin	2	2	6	No master pins required here.		
Build-up Pin	–2	–2	0	+6	+8	–6
Bottom Pin	5	0	4	3	2	8

Russwin Pre-System 70 Example (0 = Zero)

GGM	3	8	0	9	0	2
A	5	8	0	9	0	2
AA	5	0	4	9	0	2
AA1	5	0	4	3	2	8

Top Pin	T	T	T	T	T	T
Master Pin	2	8	4	No master pins required here.		
Build-up Pin	–2	0	–4	+6	–2	–6
Bottom Pin	5	0	4	3	2	8

Corbin 57A1 Keyway .552" Plug

Top Pin	T .171"	T .171"	T .171"	T .171"	T .171"	T .171"
Master Pin	2 .028"	2 .028"	6 .084"	No master pins required here.		
Build-Up Pin	–2 .056"	–2 .056"	0 .163"	+6 .247"	+8 .275"	–6 .080"
Bottom Pin	5 .228"	0 .297"	4 .213"	3 .198"	2 .186"	8 .269"

Master Ring Master Keying Rules

Progression of bittings in a master ring system is done with totally different logic than that used for single shear line cylinders.

The reader is therefore strongly cautioned against applying the following information to non-master ring cylinders. However, the more flexible master ring cylinder can use all combinations generated with traditional split-pin progression.

> The information about to be presented is an advanced topic and assumes a firm knowledge of the science of conventional master keying on the part of the reader.

A Barrel Full of Change Keys
This is the "big picture" of master ring system theory. Create a handful of master level keys using traditional progression. Then, generate thousands of change key combinations in order, but use what *appears* to be every possibility in every chamber.

Store the change keys in a barrel and pull them out at random, whenever you need them, for use under *any* of the master keys!

This is only a slight oversimplification. A 100% master ring system indeed offers this flexibility!

The Key Bitting Array
All master keying progression begins with some sort of KBA (See Unit 1) and master ring is no exception. Since there are two separate shear lines, however, the master ring KBA has two parts.

The top part is for master key progression at the ring. The bottom is for change key progression at the plug. The only constraint is that the two parts must be mutually exclusive in order to prevent key interchange. That exclusion can be as simple as one bitting in one position.

All our examples will use Pre-System 70. This is a two step progression system with ten depths.

Two different methods have been used by the factory to generate the two-part KBAs. One maintains parity while the other does not.

Method 1
We will begin with the KBA which maintains parity, since its logic will be more familiar.

Key Bitting Array No. 1

TMK	7	8	5	9	8	6
Master Keys Only	7	0	7	1	0	8
		2	9	3	2	0
		4	1	5	4	2
		6	3	7	6	4
Change Keys Only	9	0	7	1	0	8
	1	2	9	3	2	0
	3	4	1	5	4	2
	5	6	3	7	6	4
		8	5	9	8	6

The top of the KBA is for master level keys pinned to the ring shear line. Notice the constant 7 in the first column. Total position progression gives 4 x 4 x 4 x 4 x 4 = 1,024 theoretical lower level master keys under the TMK available from the other five columns of progression. These keys are made to operate by using master pins at the ring shear line. Therefore, the rotating constant method should be applied to those columns to increase security.

The bottom of the KBA is for change keys pinned to the ring shear line. Notice the absence of the 7 in the first column. This is what prevents all masters from the top progression from operating down at the plug, and all CK's from the bottom progression from operating up at the ring, *even though all other bittings of the TMK are contained in the bottom array!* All it takes is one cut to prevent operation.

Total position progression gives 4 x 5 x 5 x 5 x 5 x 5 = 12,100 theoretical change keys — the barrel full. Compare that with the 4,096 theoretical change keys available in a single shear line cylinder.

Since they are not associated with any master keys, *each master ring change can be used under any of the 1,024 master level keys!*

The only losses are MACS violations and the casualties of cross keying. Uncontrolled cross keying at the change key level is easy. Selective master keys are easy. All traditional limitations of split pin master keying become insignificant in a master ring system.

Now that we have demonstrated how bittings that would destroy a split pin master key system can be used together safely in master ring cylinders, we can introduce the factory's second method of progression.

Master Ring Master Keying Rules

Method 2
This method of progression involves a periodic change of parity in all but one column of the change key bitting array. This, too, is unheard of in split pin master keying, but totally safe in 100% master ring systems. This method should be avoided in areas of the system where single shear line cylinders are included.

In order to present this type of progression, we will demonstrate by example. Therefore, we will need to add the *sequence of progression* to our KBA. This is the order in which the columns are progressed. We will use letters in the *SOP.* Column A changes first, Column B next, etc.

Key Bitting Array No. 2

TMK	7	8	5	9	8	6
Master Keys Only	7	0	7	1	0	8
		2	9	3	2	0
		4	1	5	4	2
		6	3	7	6	4
Change Keys Only	9	1	0	0	1	1
	1	3	2	2	3	3
	3	5	4	4	5	5
	5	7	6	6	7	7
		9	8	8	9	9
		0	1	1	0	0
		2	3	3	2	2
		4	5	5	4	4
		6	7	7	6	6
		8	9	9	8	8
Sequence of Progression:	F	E	D	C	B	A

The master key (top) portion is identical to that of KBA No. 1. The change key (bottom) portion itself now has two parts.

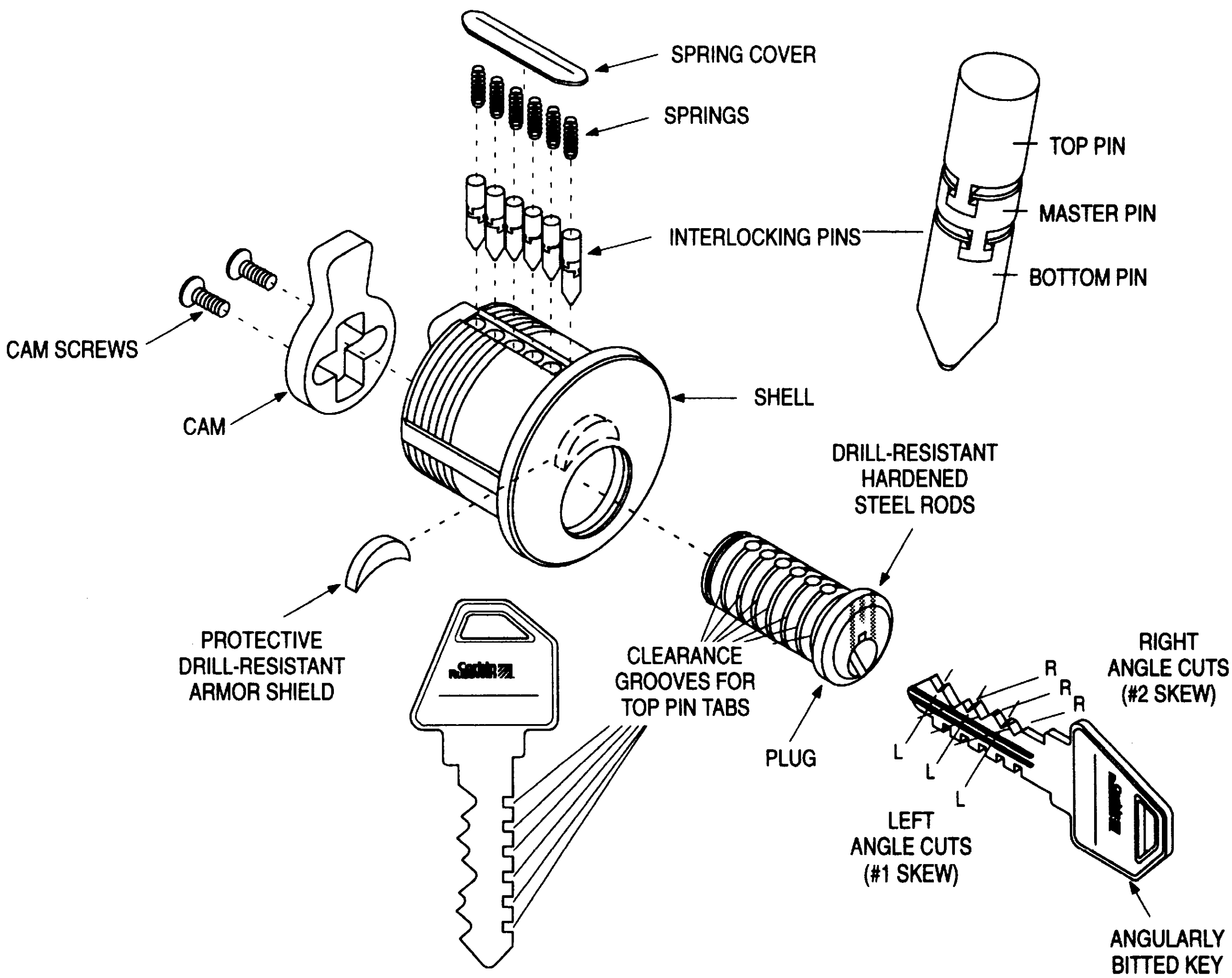
Rule: Each time a new column changes, change the parity of all previously progressed columns simultaneously.

This will give the illusion that key interchange will eventually occur from keys being only one increment away from each other in what should be a two step system. However, notice that the last progressed column (F) of the KBA never gets that close. It only takes one cut to *prevent* interchange, even if all other cuts appear suspicious!

It is more difficult to explain this progression than it is to do it. The easiest way to learn is by observing. Here is the first section:

910011	910200	910411	910600	910811	912100	912311	912500	912711	912900
3	2	3	2	3	2	3	2	3	2
5	4	5	4	5	4	5	4	5	4
7	6	7	6	7	6	7	6	7	6
9	8	9	8	9	8	9	8	9	8
30	21	30	21	30	21	30	21	30	21
2	3	2	3	2	3	2	3	2	3
4	5	4	5	4	5	4	5	4	5
6	7	6	7	6	7	6	7	6	7
8	9	8	9	8	9	8	9	8	9
51	40	51	40	51	40	51	40	51	40
3	2	3	2	3	2	3	2	3	2
5	4	5	4	5	4	5	4	5	4
7	6	7	6	7	6	7	6	7	6
9	8	9	8	9	8	9	8	9	8
70	61	70	61	70	61	70	61	70	61
2	3	2	3	2	3	2	3	2	3
4	5	4	5	4	5	4	5	4	5
6	7	6	7	6	7	6	7	6	7
8	9	8	9	8	9	8	9	8	9
91	80	91	80	91	80	91	80	91	80
3	2	3	2	3	2	3	2	3	2
5	4	5	4	5	4	5	4	5	4
7	6	7	6	7	6	7	6	7	6
9	8	9	8	9	8	9	8	9	8

High Security



This cylinder was invented by Walter Surko and patented (#4,103,526) in 1978. It was originally marketed with the Emhart brand name. This was the very first high security cylinder to offer an economical choice for a keying system. That is, it was the first high security mechanism which could be integrated with conventional cylinders in the same master key system.

All Corbin Russwin high security cylinders are 6-pin. In addition to drill resistance and a high level of pick resistance, they offer a higher degree of key control by requiring special machinery to cut the keys. Interchangeable core and special function cylinders add to the high security cylinder offering. These are covered in other sections of this manual.

Keyways

The cylinder is available with System 70 depths in the most modern (Z and DH Class) keyways:

- 59 Series
- 60
- 70
- D Series
- H Series
- L Series
- Restricted and patented keyways

Bitting Angles

The angles, often called skews, are 20° from the perpendicular. There is no CENTER (perpendicular) cut. To read the angles of a key, hold the bow with the blade pointing away from you. Imagine a line going through each cut, as shown above. Then turn that line into an imaginary arrow pointing toward you. The arrow will either point toward you on the LEFT or the RIGHT.

L and **R** are the most logical designations for the angles. In practice, however, the factory uses the numerical designations 1 for LEFT and 2 for RIGHT. The bitting is written bow to tip and includes cut depth and angle. Depending on your preference for letters or numbers, a key with cuts 245633 and angles LRLRLR could be written 3 different ways:

2L 4R 5L 6R 3L 3R

$2_1 4_2 5_1 6_2 3_1 3_2$

2(1)4(2)5(1)6(2)3(1)3(2)

The numerical notation as a subscript appears on most handwritten bitting lists while the parenthetical version is prevalent on computer generated bitting lists. L and R are easier to learn and teach with, so that is what will be used in this manual. It is also the way the PK-70-HS pin kit is labeled.

Combinating High Security

Bitting Depths

Since high security cylinders use System 70 depths exclusively, you would expect 6 possible depths on the keys. However, System 70's shallow 1 cut removes almost no material from the key blade. Therefore, a chisel pointed bottom pin would not have enough of a seat in the cut root for positive rotation. For this reason, high security cylinders use *only depths 2 through 6.*

The beginning of Appendix A shows conventional System 70 bitting specs opposite the high security specs. You will find that the high security cuts are .006" deeper than the conventional ones. This is because the conventional pins are more blunt and cannot seat in the V-shaped high security cut roots. They are held at their proper height by the sides of the V cuts of a high security key. This is what allows high security cylinders to be integrated into the same keying system as conventional cylinders.

Key Codes

Each set of high security keys comes with a tag bearing the code number for that particular combination. The code has three digits followed by five letters. Example: 243 BZYXP.

The three digits designate the keyway and the letters designate the cuts and angles. Stock codes were sold for a short time on microfiche but a large number of codes are reserved for keying systems and have never been published.

The code number is required by the factory when ordering cut keys. If the keys are part of a keying system, a letter of authorization is also required. It is best to check with the Key Records Department before placing an order.

Here is a listing of keyway prefixes for high security key codes.

226	59A	306	D41
227	59AB	308	H81
228	59AC	309	H1
229	59AD	310	H2
230	59A1	311	H3
231	59A2	312	H4
232	59B	313	H5
233	59BD	314	H6
234	59B1	315	H7
235	59B2	316	H8
236	59C	317	H12
237	59CD	318	H34
238	59C1	319	H41
239	59C2	320	H56
240	59D	321	H61
241	59D1	322	H78
242	59D2	323	H83
243	60	324	H85
244 - 291	Restricted	325 - 341	Restricted
292	70	551	L2
293	Restricted	556	L1
300	D1	557	L3
301	D2	558	L4
302	D3	559	L12
303	D4	560	L34
304	D12	561	L41
305	D34		

Cutting Keys

Most modern key coding machines are capable of cutting Corbin Russwin high security keys. Consult your code machine manual for the proper cutter. Refer to Appendix A for proper depth and spacing.

Original Corbin Russwin key blanks manufactured since 1986 are made of very hard material to resist breakage. A drop of oil on the cutter (and protective clothing from the splatter!) will ensure longer cutter life.

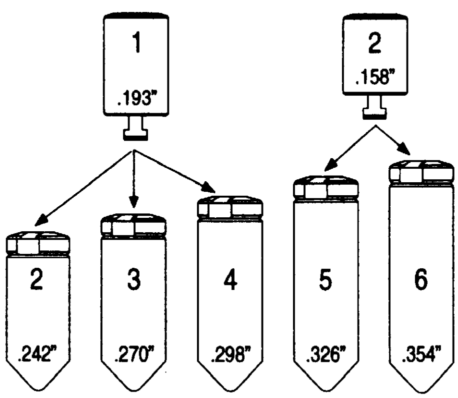
To order original high security key blanks, use the normal key blank number format of Corbin Russwin and order the 90 bow. The high security version of D1-6PIN-10 is D1-6PIN-90.

Key blanks may be ordered without formalities for nonrestricted key sections. Restricted blanks require a letter of authorization from the end user.

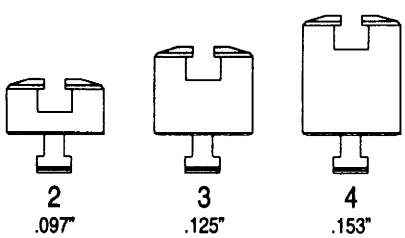
High Security

Pin Lengths

Since there are 5 depths possible on a high security key, there are also 5 lengths of bottom pins. There are only two lengths of top pins. Selection is based on the length of the bottom pin (or bottom pin + master pin) in the chamber, as illustrated.



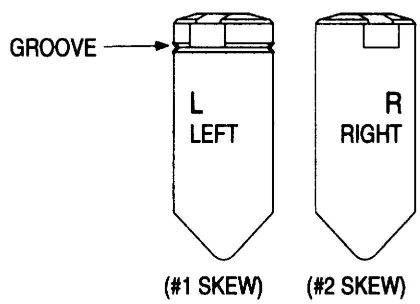
Master pins have three lengths:



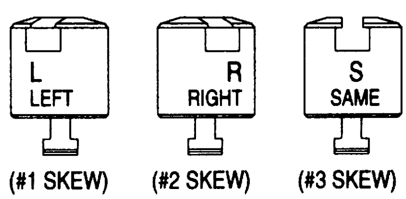
Note: These pin lengths include the projecting "T" of master pins and top pins. Therefore, the overall length of the interlocked pin stack will be considerably less than the sum of these dimensions.

Pin Angles

For ease in recognizing the angle of bottom pins, a groove is cut all the way around the top of all L pins. You can also hold bottom pins so that the chisel point is centered on the bottom and observe which direction the T-groove in the top points. It will either point LEFT or RIGHT.



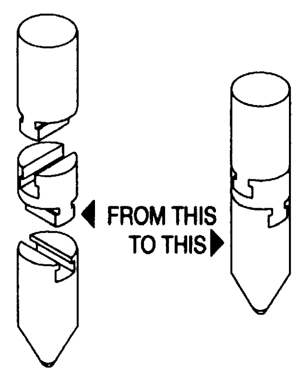
Master pins have three angles:



Reading a master pin's angle is similar to reading a bottom pin's angle, but there is no groove around the L angle pin. Hold the master pin with its interlocking tab centered on the bottom. Observe where the groove across the top points. It will either be <u>L</u>eft, <u>R</u>ight, or <u>S</u>traight in line with the tab on the bottom.

Handling the Pins

A plug follower cannot be used. The tab of the top pin extends below the shear line and rides in a groove cut around the plug at each pin chamber. All high security cylinders must be top loaded. Select the proper pins from the kit, interlock them in your fingers and drop the entire connected pin stack into its chamber.



Interlock pins, then load chambers.

Special Cylinders

Separate pages of this manual are devoted to these high security cylinder variations:

- High security IC
- Blockout function
- Brink function
- Hotel function

Pin Kit

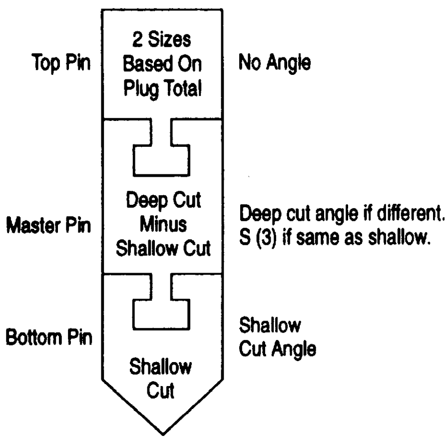
The PK-70-HS kit accommodates all Corbin Russwin high security cylinders, including the special ones just listed.

Combinating High Security

Pin Selection

The angle of the bottom pin matches the angle of the key cut. When master keying, the angle of the bottom pin matches that of the *shallower* cut in that chamber.

When the angles of the master key and change key are *different*, the angle of the *deeper cut* determines the angle of the master pin for that chamber (either **L** or **R**.) When the master and change keys have the *same* angle, use an **S**. This angle is called a 3 in the numerical notation. **L** and **R** are 1 and 2, respectively.



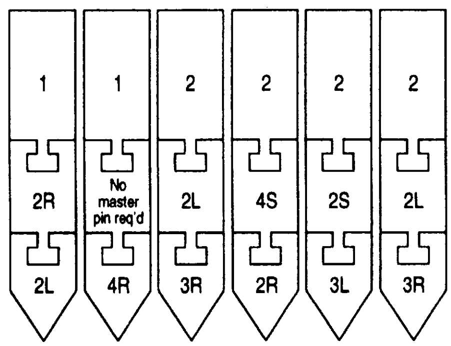
Combinating Exercise

We will start with a cylinder which is not master keyed. The key combination is 2L 4R 5L 6R 3L 3R.

Use bottom pins which exactly match the key cuts, both in length and angle.

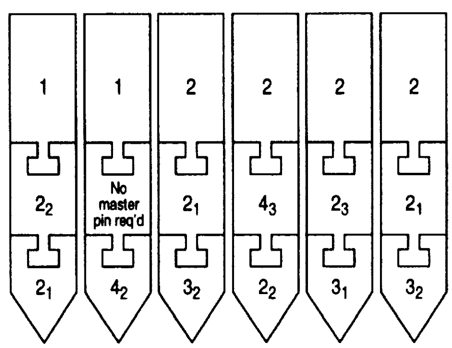
As already illustrated, the two sizes of top pins are used as follows: #1 is used when the bottom pin (or bottom + master pin) is 2, 3 or 4. The #2 top pin is used with 5 and 6. The angles are not relevant to top pin selection. The depths 245633 require this set of top pins: 112211.

In a master keyed cylinder you need master pins of the proper length *and angle*. Using our key bitting of 2L 4R 5L 6R 3L 3R as a master key, we will invent a compatible change key. The change key bitting is 4R 4R 3R 2R 5L 5L. Using the rules under Pin Selection, here is the complete cylinder combination. Note that the second chamber was constant in our example, so no master pin is used.



Master:	2L	4R	5L	6R	3L	3R
Change:	4R	4R	3R	2R	5L	5L

If you use the numerical designations for the angles, your pinning would be as follows.



Master:	2_1	4_2	5_1	6_2	3_1	3_2
Change:	4_2	4_2	3_2	2_2	5_1	5_1

Master Keying Rules

If you are generating your own keying system, keep these rules in mind.

Rule 1. There is no #1 depth in high security keys.

Rule 2. The MACS is 4 when adjacent cuts have the same angle and 3 when they have opposing angles.

Rule 3. There is no #1 master pin. Therefore, all change keys must be at least two steps away from the master key, though they may vary by one step from each other.

Rule 4. Angles can be mixed within the same chamber and even the same depth when only high security cylinders are involved.

Rule 5. Mixture of high security and conventional cylinders in the same system *must be planned from the inception of the system.* Different angles cannot be of the same depth when that depth is used in a conventional cylinder. Conventional pins cannot differentiate between angles.

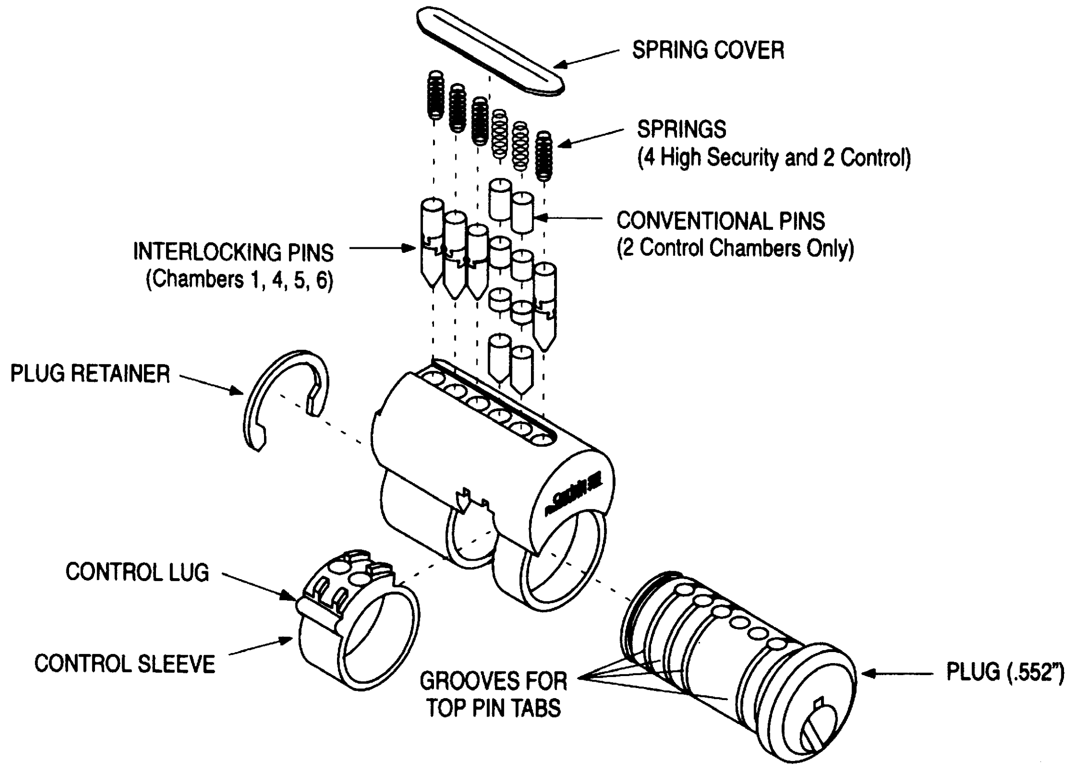
Rule 6. Item 5 above applies to the second and third chambers of high security interchangeable cores and the last chamber of blockout and Brink function cylinders, since conventional pins are used in those chambers.

Rule 7. Special rules apply to the last chamber of Brink and blockout function cylinders. See pages 44 and 45.

Sample Key Bitting Array

TMK	2L	4R	5L	6R	3L	3R
	4L	6L	2L	2L	5L	5L
	4R	6R	2R	2R	5R	5R
	5L	2L	3L	3L	6L	6L
	5R	2R	3R	3R	6R	6R
	6L			4L		
	6R			4R		

Combinating High Security Interchangeable Core



In the exploded view, notice that four chambers of the core have only one shear line and use high security interlocking pins. The other two chambers are the control chambers. They have two shear lines and use conventional pins.

If you are not familiar with pinning Corbin Russwin high security cylinders or interchangeable cores, previous pages of this manual are devoted to each. These principles must be thoroughly understood before combinating the high security IC.

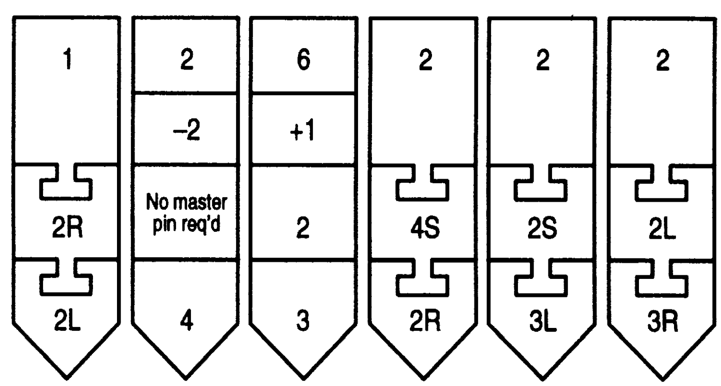
Pinning the high security chambers is done with exactly the same method as described in the previous section of this manual. Pins for the control chambers are determined the same way as they are for conventional cores, but their actual lengths will be different because the high security core has a .552" diameter plug and the conventional core has a .509" diameter plug. The high security page in Appendix A provides all necessary information for pin lengths.

Here is an example set of key bittings and the corresponding core combination. The control key must always be the same as the TMK everywhere but the two control chambers, so disregard those four bittings when combinating. They are shown in smaller type.

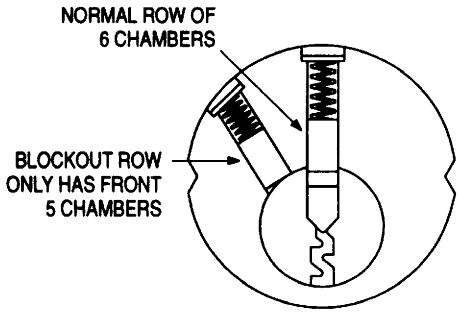
Since conventional pins cannot distinguish between the angles of high security keys, it is usually not possible to integrate IC into a high security keying system which was not originally set up for IC.

Note that both operating keys have 4's in the second position, so no master pin is used.

Control	2L	2R	6L	6R	3L	3R
TMK	2L	4R	5L	6R	3L	3R
Change Key	4R	4R	3R	2R	5L	5L



Blockout Function Cylinders

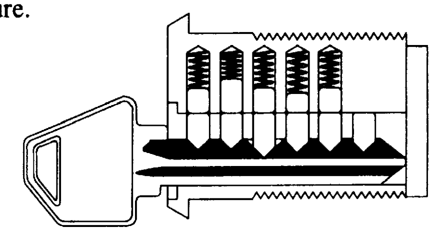


1012 Series blockout mortise cylinders and 3012 Series blockout rim cylinders are available exclusively with the Emhart High Security mechanism.

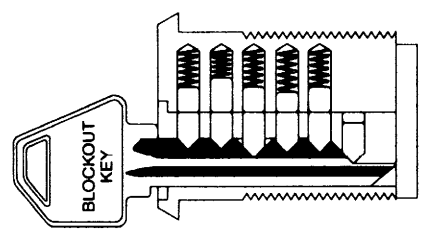
Blockout cylinders have two rows of top pins. The row at 12 o'clock is a complete, normal row in both the plug and shell. The "blockout row" at 11 o'clock in the shell, however, is incomplete. The 6th chamber is missing. Remember that the plug has all six pin chambers loaded.

The front 5 chambers are combinated with high security pins, while the blockout chamber is combinated with conventional pins.

All keys turn normally. This illustration shows a normal operating key turned to the blockout position. With no 6th chamber in the shell, the pins in the 6th chamber of the plug cannot move out of the way to clear the steeple at the end of the key. Therefore, it cannot be removed in this position and the user is not aware of any special feature.

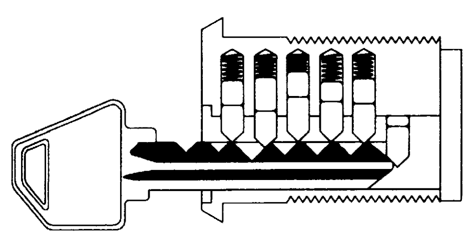


The blockout key has the last steeple removed, so it can be removed in the blockout position. This leaves the plug turned with a fully loaded chamber in the back.



While the cylinder is in the blockout mode, normal operating keys with the last steeple present are blocked by the pins in the 6th chamber of the plug. These pins have no place to move to clear the incoming key. Therefore, the normal keys (masters, changes, etc.) are temporarily blocked out.

The blockout key can be inserted again and turned to the 12 o'clock position to release the blockout function and when normal cylinder operation is again desired.

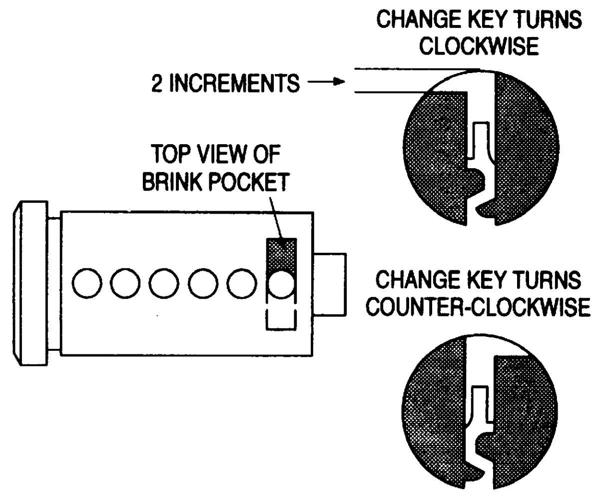


Keying System Design

The last chamber may not be used for change key progression. There must be a constant relationship between the operating keys and the blockout key in this position. The blockout key must be 2 increments deeper than the operating key.

The factory recommends using a 6 or 5 for the blockout key and a 4 or 3, respectively, for the operating keys. This creates a sufficient steeple at the tip of the key.

Brink Function Cylinders



Description and Application

Primarily used in minimum security detention facilities, the Brink function mortise cylinder is *handed.* It offers a change key which will only turn in one direction while the master key turns in both directions.

The cylinder was originally developed to operate in certain R. R. Brink Co. detention hardware. It also operates in other brands of similar products and can be used for a variety of custom security solutions totally unrelated to the detention market.

A non-detention related application for this cylinder could be an Adams Rite 4710 Series latch lock on the entrance of an office building, apartment building or hotel. The manager has the master which turns in both directions. It can set the holdback feature to leave the door unlocked during the day. At the end of the day, the latch is released, so the door remains locked when closed.

Employees or residents have the change key which only turns in the direction of latch retraction for after-hours entry. It cannot be turned to set the holdback feature and leave the building open through the night.

Limitations

The factory must know at the outset of a keying system whether Brink function cylinders are to be integrated. One chamber is reserved for the special function and no master keying progression can be done in that chamber. This severely limits the expansion available in a large system, so Brink function cylinders should have their own *separate* keying system if used within a larger job.

The proper cam and direction of travel must be verified before the cylinders are ordered for the hardware. In 1004 (conventional) and 1014 (high security) cylinders, the change key turns only *clockwise.* In 1005 and 1015 cylinders, it turns only *counter-clockwise.*

These cylinders are not usable in applicatons where 360° key rotation is required.

Operation

A pocket is milled to one side of one pin chamber. Typically, this is the 6th chamber. The change key uses a deep cut which lifts the bottom pin only to the bottom of the pocket. Thus, it can turn the plug only in the direction allowed by the missing material. The master key is two System 70 increments shallower to lift the bottom pin all the way up to the normal plug shear line. This allows the master key to turn in both directions.

Combinating Procedure

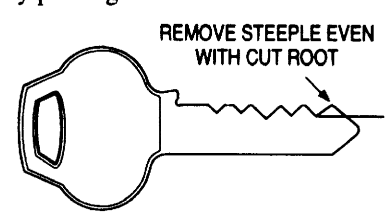
Note: Combinate the high security version of the Brink function cylinder as any other Emhart high security cylinder, but use *conventional* pins in the 6th chamber. There can be no progression of angles in the last chamber, because conventional pins cannot distinguish between cut angles.

Keying System Design

The special chamber (normally #6) may not be used for change key progression. There must be a constant relationship between the change keys and the master key in this position. The master key must be 2 increments (or 4 in Pre-System 70) shallower than the change keys.

The factory recommends using a 6 or 5 for all change keys and a 4 or 3, respectively, for all master keys.

Removal of the steeple at the tip of the change keys will help guard against key picking.



Hotel Function Mortise – Conventional and High Security

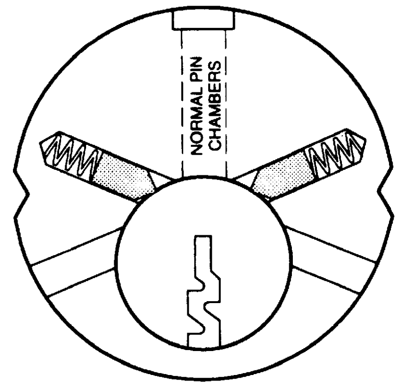
During the long history of the company, there have been a wide variety of different mechanisms made to accommodate the special features needed for hotel locks. The most common are presented here.

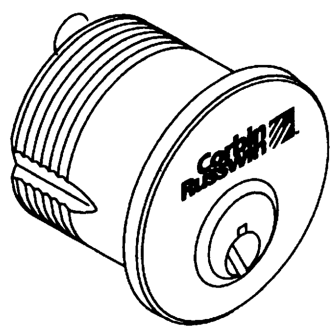
Mortise locks are most widely used for hotel guest rooms, so they will be presented first.

The standard 1001 and 1011 hotel function mortise cylinders use six pins for standard operation and for master keying progression.

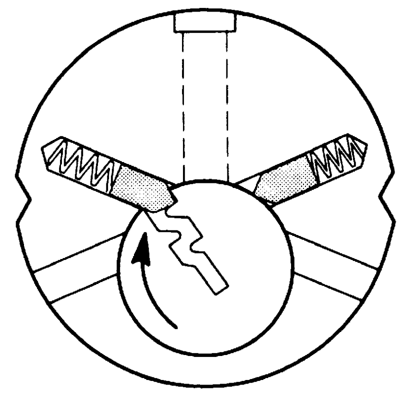
Behind the 6th chamber are a pair of small diameter diagonal pin chambers which contain the blocking pins and springs. There are two of these chambers in order to block rotation in both directions, allowing for a non-handed cylinder. The pin number is 197F52-7 and the spring is 26F75-7.

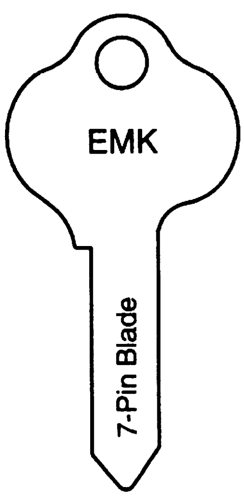
When no key is inserted, the blocking pins press against the surface of the plug. They remain there during most of the rotation of the normal keys.

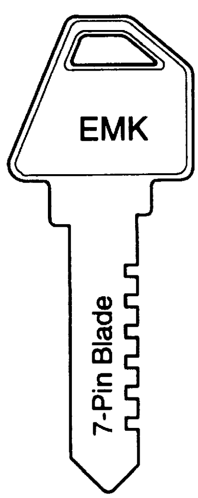




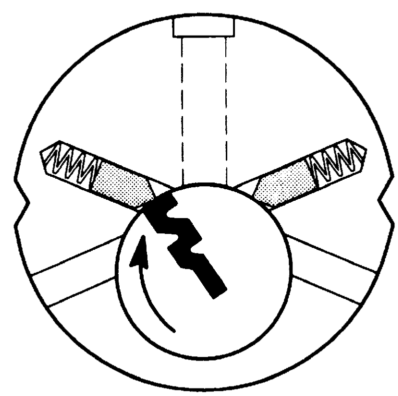
When the normal keys reach a certain rotation, the blocking pin enters the bottom of the key slot, preventing any further rotation in that direction. This is what prevents the 6-pin guest keys, maid's master keys and the grand master key from either projecting or retracting the dead bolt. They will only turn far enough to retract the latch.







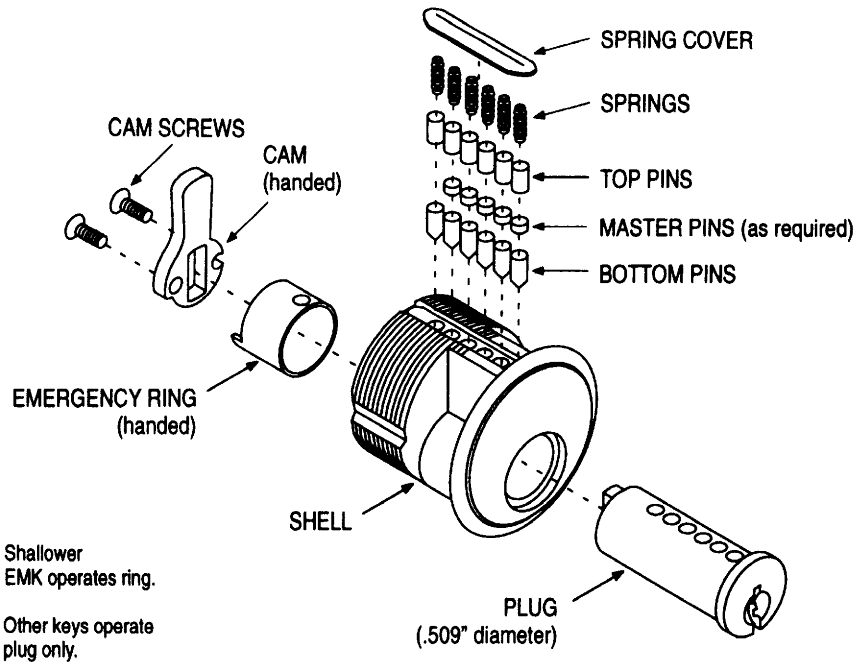
The emergency master key (EMK) and display key are cut on 7-pin blanks. The extra length of the key blade fills the gap in the bottom of the key slot, preventing the blocking pins from engaging, and allowing full 360° rotation in both directions to operate the dead bolt.

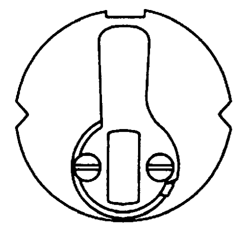


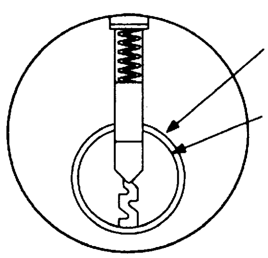
Emergency keys for these cylinders can use any standard 7-pin blank such as xx-7PIN-51. Note that there is no other use for the 7-pin high security key blank xx-7PIN-90 because Emhart high security cylinders are all 6-pin. The "xx" represents the key section in these key blank numbers.

While this function was designed specifically for hotel use, it can be used in other applications as a creative solution to certain security needs.

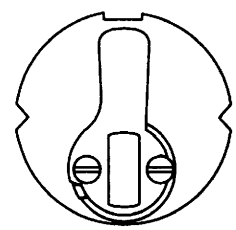
Old Style Corbin Hotel Function Mortise




CLOCKWISE



CROSS SECTION


COUNTER-CLOCKWISE

Background

This cylinder was furnished for X Class hotel systems until 1969. There are still older motels full of them in the field, which locksmiths must service from time to time.

Corbin Russwin no longer makes parts for these cylinders. Plugs are not even available because the original ones were .509" diameter, while today's mortise cylinders use .552" plugs. However, you can still replace worn pins and inaccurate keys, or generate a new keying system for these old cylinders.

This cylinder used only X Class keyways and Pre-System 70 bitting specs because System 70 had been developed yet. Both the straight and the cloverleaf cam were used.

Operation

The back chamber has an emergency ring which restricts cam rotation and operates similar to the ring of a master ring cylinder. The ring and the cam are handed parts. The cam is cut away to allow limited rotation away from the tab projecting from the back of the emergency ring.

The ring is about .042" thick, representing 3 increments. No master pins are used in this chamber. All normal operating keys such as guest keys, maid's master keys and the grand master key have a constant deep cut at the tip. These deeper keys only rotate the plug inside the stationary ring. Since the ring does not move, plug rotation is limited by the tab on the emergency ring to about 80° in one direction.

Remember that Corbin Pre-System 70 is **TIP** to **BOW** and 0 represents 10, the deepest cut.

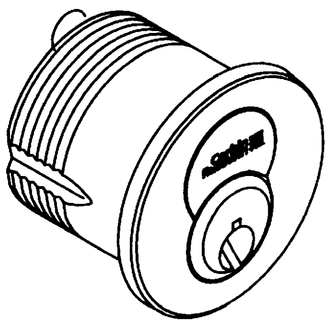
The EMK is 3 increments shallower. It lifts the long bottom pin up to the shear line on the top of the emergency ring (without build-up pins!). Therefore, when the EMK turns, the ring turns together with the plug and cam, allowing a full 360° rotation in either direction.

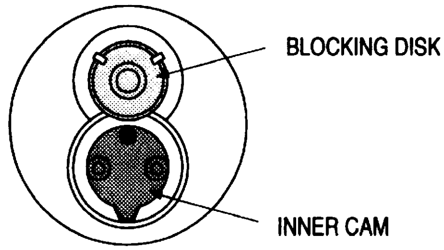
Typical bittings:
EMK 509800
TMK 809800

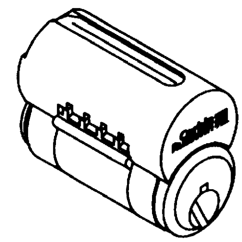
Master Keying Rules

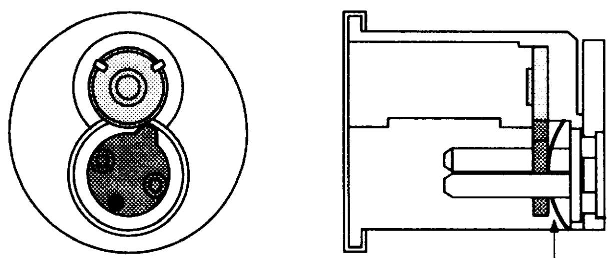
1. The tip cut of the TMK should be 8, 9 or 0.
2. The tip cut of the EMK is automatically 3 increments shallower than the TMK (5, 6 or 7, respectively).
3. The tip cut is constant, so master keying capacity is only that of a 5-pin system (1,024 theoretical changes.)
4. Remove the steeple from the tip of all keys other than the EMK to prevent them from key picking the emergency ring.

Hotel Function IC Mortise – Conventional and High Security

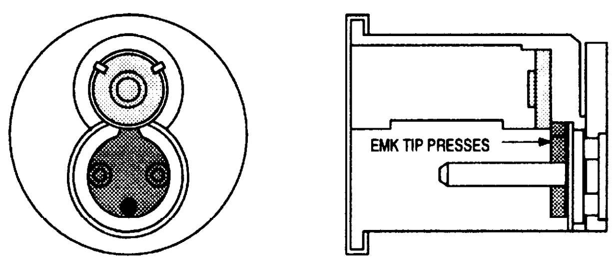








CAM ROTATION BLOCKED BY DISK



CAM PASSES BEHIND BLOCKING DISK

The 1081 and 1091 interchangeable core hotel function mortise cylinders operate on a different principle from other Corbin Russwin hotel function cylinders. They use a standard 6-pin core in the special 1071 hotel function housing.

There is a thin inner "cam" at the base of the throw member and a steel disk staked inside the housing at the back of the core bore. The thin cam is sprung forward so that it hits the steel disk when the normal keys are rotated. This blockage prevents the guest key, maid's master key and grand master key from turning far enough to retract or project the dead bolt.

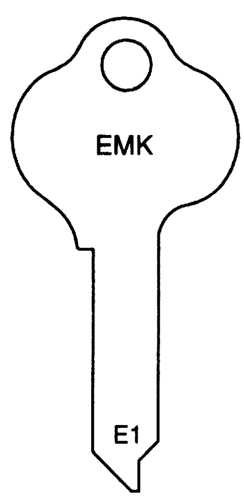
The EMK and display key have an extended tip which passes through the back of the core and presses against the thin cam. It forces the cam rearward against its own spring pressure so that it will pass *under* the steel disk. This clears the way for full 360° rotation of these special keys in both directions to operate the dead bolt.

While this function was designed specifically for hotel use, it can be used in other applications as a creative solution to certain security needs.

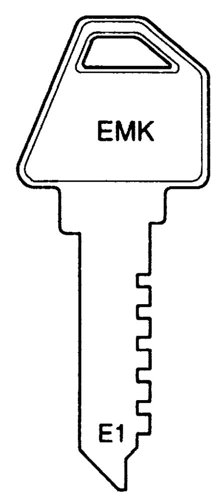
The key blanks for emergency and display keys are made from 7-pin blanks which are shortened and under cut at
the tip.

In these key blank catalog numbers, substitute the key section for "xx".

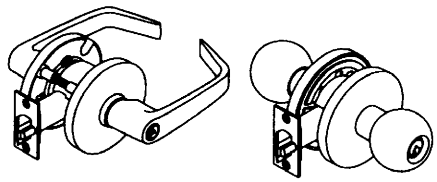
For 1081
Conventional IC Mortise
xx-6PIN-51-6E1



For 1091
High Security IC Mortise
xx-6PIN-90-6E1



Hotel Function Cylindrical – Conventional, IC and High Security



The cylinders for the many hotel function cylindrical locks are all different but the operating principle is identical, even for the IC versions.

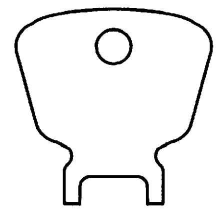
The outer knob or lever is always locked. Pressing the button on the inside places the lock in the shut out mode. Closing the door or turning the inside knob or lever pops the button back out, to prevent guests from locking themselves out.

When in the shut out mode, the indicator pin extends from the plug face and a projection enters the rear of the keyway at the bottom. This projection blocks the guest key, maid's master key and grand master key from fully entering the keyway.

The EMK and display key require an undercut tip to bypass the projection in the keyway. Thus, they enter the plug fully and operate the lock, even when it is in the shut out mode.

The shape of the undercut varies with the type of lockset, as designated by the E# suffix, shown below.

Caution: When testing keys in these cylinders, NEVER allow the EMK to turn 180°. The undercut can allow thin master pins in the last chamber of the shell to come into the bottom of the keyway and the cylinder will "rekey itself." *This can only happen while the cylinder is removed.*

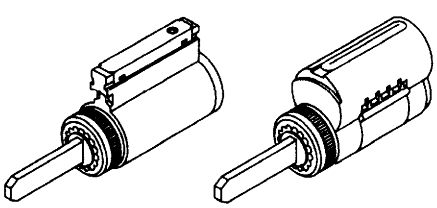


Spanner Key 041F47

The spanner key can be used by hotel management or by a guest with a display key to *turn* the inside button after it is pressed. This allows the lock to remain in the shut out mode as the door is closed.

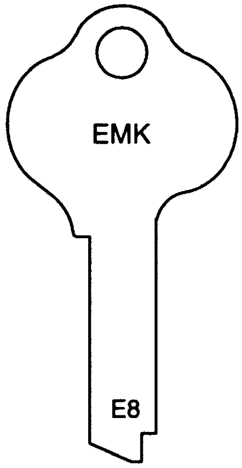
Hotel function locksets can be used in non–hotel applications as a creative solution to security needs.

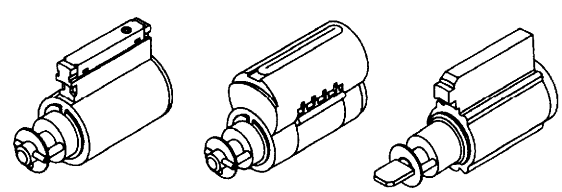
In these key blank catalog numbers, substitute the key section for "xx".



For CL3429, CL3629 6 or 7-Pin, Including IC

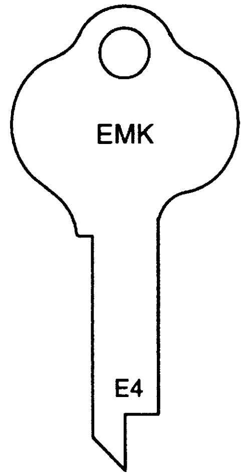
xx-6PIN-51-E8
xx-7PIN-51-E8

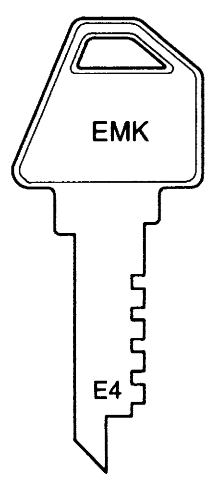


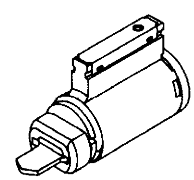


For CK4229 Conv. and High Security, Including IC and CK4429

xx-6PIN-51-E4 **xx-6PIN-90-E4**

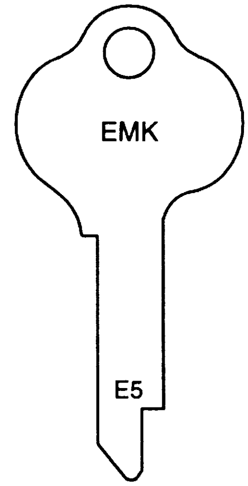




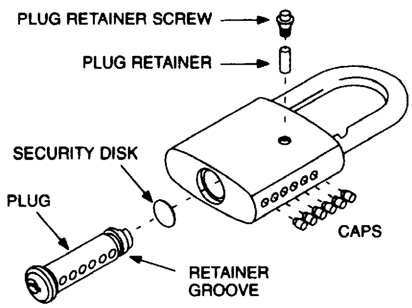


For 1429, 4333EM, 5629, 3333EM

xx-6PIN-51-E5



Standard Padlocks



Since padlocks are little more than cylinders with shackles, they are included in this manual. Padlocks have been available with these Corbin Russwin cylinder types:

- conventional pin tumbler
- master ring
- interchangeable core (standard & high security)
- figure-8 removable cylinder (standard & high security)
- figure-8 removable core

Many standard and master ring padlocks with the Corbin brand name have keyways, pinning and key bitting specs of the Corbin Cabinet Lock Division, which was sold in 1985. For products to retrofit these keying systems, contact CCL Security Products at the address given near the beginning of Appendix A.

PL5000 Series

The current model is shown here. The plug is held in with a retaining pin concealed under a brass plug retainer screw. If you buy the padlock non-assembled, you may need to file the retainer groove in the plug for a proper fit with the retainer. Remove only enough material to prevent binding.
DO NOT remove too much material, as this will cause end play and the key will have to be "pinched" to remove it.

Rekeying an Assembled Lock

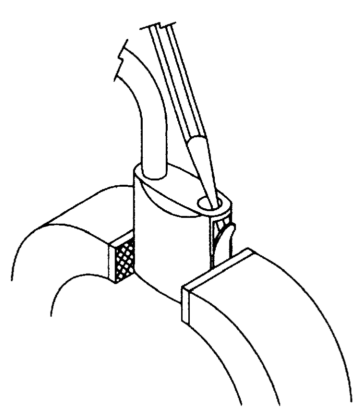
If you must rekey an assembled padlock, you will need a supply of replacement caps for the pin chambers. Never remove the plug for rekeying unless you must change the keyway. If you remove the plug, you will need a replacement plug retainer screw.

To remove the pin chamber caps, you must first locate them. A very light application against a wire wheel or piece of fine sandpaper may help if they are camouflaged by oxidation. Tap a mark into the center of each cap with a center punch. This often pushes the cap down below the surface of the lock. Spacing between centers is .156".

Drill out the caps one by one. If you are sure you have marked the center of the cap, use a # 43 drill. Otherwise use a smaller size. As the drill breaks through the bottom of the cap, the cap will often spin. When this happens, the cap will usually come out with the drill. If it doesn't, use a small easy-out to remove the cap.

Do not use too large a drill bit, or miss the center of the cap. If this happens, you risk removing too much material in the pin chamber and the new cap may not hold when you reassemble the lock.

For old style locks, unlock the lock and place it in a vise as shown below. Using a drift or other small, sturdy instrument, knock the top end of the spring cover out.



Remove the lock from the vise and carefully pry the rest of the cover loose. No replacement parts are available from the factory. The old cover must be removed carefully enough to be reused. Once removed, straighten the spring cover. Then insert one edge into the vise and tap the cover into a tent shape for easier reassembly.

Combinating Procedure

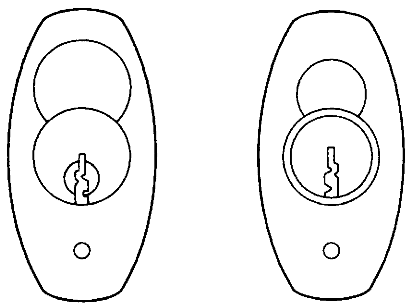
These padlocks cannot be serviced with a plug follower. They must be top loaded. Determine the bottom and master pins as described under Combinating Conventional Cylinders earlier in this unit. If you are rekeying a master ring padlock, use the instructions under Combinating Master Ring, also in this unit. In either case, use pins for .509" diameter plug and use .320" top pins in all chambers instead of the .171" used in standard cylinders.

Reassembly

After combinating, test all keys and check for end play in the plug before beginning the resealing process. Use new tumbler springs. Firmly tap a new cap far enough into each pin chamber to be very snug and secure. For old style locks, tap the spring cover down flat into its cavity and peen around the edges to eliminate any large gaps.

Use a coarse file to remove the majority of the caps protruding from the surface. Finish off with a fine file, following the curvature of the padlock with each stroke to produce a smooth, uniform appearance.

Removable Cylinder and Removable Core Padlocks



Interchangeable Core — Removable Cylinder or Core

How to Tell the Standard IC Lock From These Two

The PL5080 Series interchangeable core padlock uses today's standard core with both lobes of the figure-8 the same diameter. See the regular or high security IC section of this unit for core construction and combinating.

In the removable core and the removable cylinder padlocks, the top lobe of the figure-8 is smaller than the bottom lobe.

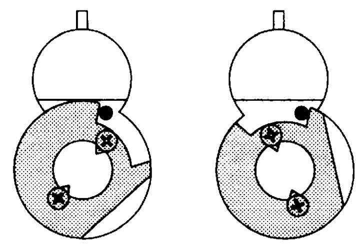
How to Tell the Removable Cylinder Model from the Removable Core Model

Both models look identical from the outside. If you unlock the padlock, you will see the small steel retaining pin or control lug down in the shackle hole. With the key turned all the way clockwise, try to depress the pin. If it depresses, it is the *removable cylinder* model and you can remove the cylinder. If it does not depress, you have the *removable core* model and must make a control key.

Removable Cylinder Model

This model was made from 1968 to about 1977. Instead of a control key, you must use a tool to remove this cylinder. Insert any operating key and unlock the padlock. While the key is still turned clockwise, just reach into the shackle hole with a small tool and depress the spring-loaded retainer. While the retainer is depressed, pull the cylinder out. If no keys are available, pick the plug clockwise, unlock and depress the retainer.

BACK VIEW



Retainer Blocked — Key Turned Clockwise. Depress Retainer

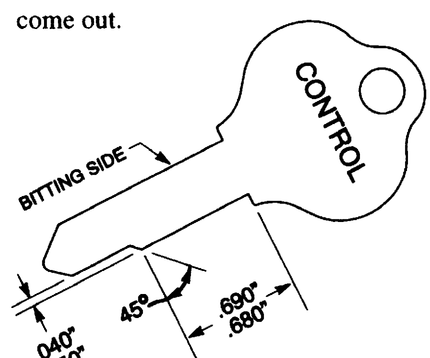
If the cylinder is high security, it cannot be serviced with a plug follower. Remove the spring cover and follow the high security combinating instructions earlier in this unit.

If it is a conventional cylinder, remove the two screws on the back and service the cylinder with a .509" diameter plug follower (catalog # CT-4). Follow the instructions under Combinating Conventional Cylinders earlier in this unit.

Removable Core Model

This is the original version of this padlock made from 1964 to about 1977. The core is installed and removed with a control key but it is NOT interchangeable in any other Corbin Russwin products.

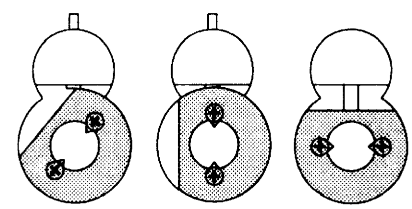
A ward pin is pressed into the shell between the 4th and 5th chambers to prevent keys from turning counterclockwise. You can make a control key from *any* operating key by undercutting the tip to bypass the ward as shown. If no key is available, impression one or pick the plug counterclockwise and the core will come out.



If the control lug (spring-loaded pin) is rusted and doesn't withdraw under its own spring pressure, unlock the lock first. Turn the plug back counter-clockwise to the control position and insert a tool into the shackle hole to depress the control lug.

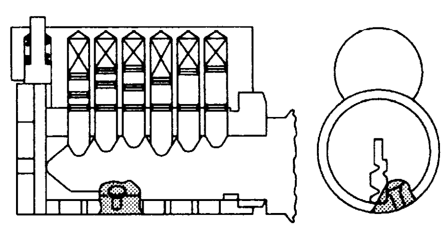
Once the core is out, remove the two screws on the back and service the cylinder with .509" diameter plug follower # CT-4. This follower has a slot which must be present to bypass the stop pin in the side of the shell.

BACK VIEW



Locked Position — Operating Key Truns Clockwise Only — Control Key Turns Counter-Clockwise

SIDE VIEW



The plug must be turned slightly counterclockwise so the bottom of the keyway clears the stop pin in the side of the shell. Otherwise the plug is retained by this pin. Therefore, you must either use the control key or shim the plug to remove it.

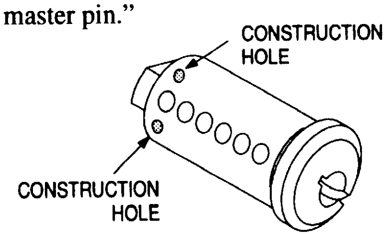
Other aspects of combinating this core are the same as described under Combinating Conventional Cylinders earlier in this unit.

Construction Master Keying

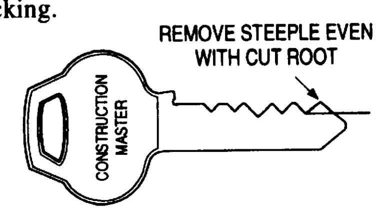
Construction master keying is a labor saving convenience feature. It allows a construction master key (CMK) to be used temporarily while the building is under construction.

When construction is completed, the end user cancels the CMK's operation simply by turning the change key in each cylinder, rather than replacing or rekeying the cylinder.

Cylinder plugs have small diameter "pockets" drilled at 40° on each side of one pin chamber. To do this in the field, use a #39 (.0985" -.1015") drill. Three .045" ball bearings are used in this chamber as a sort of "temporary master pin."

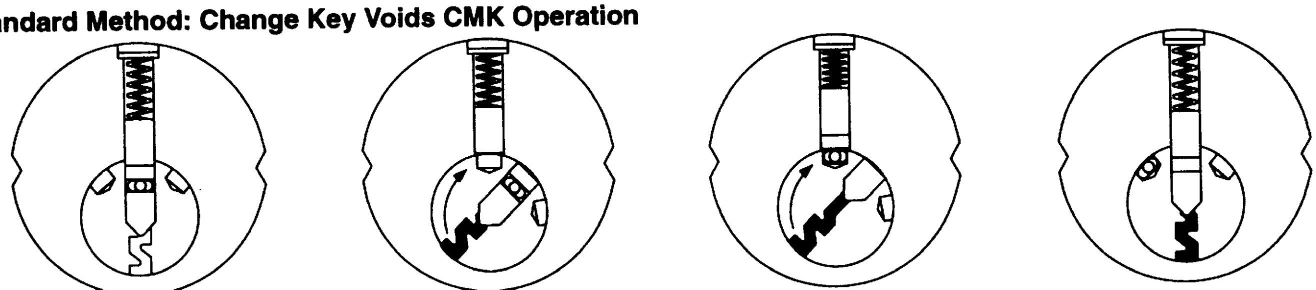


Normally, the last chamber is used, and the steeple should be removed from the tip of the CMK to guard against key picking.



We will use System 70 depths to explain the illustrations below. See the facing page for Pre-System 70 numbers.

Standard Method: Change Key Voids CMK Operation



Rest position | CMK operates freely either direction | Change key turned either direction "loses" CM balls into pocket | CMK inserted

The cylinder in the first view has no key inserted. The balls are placed on top of the bottom pin in the standard method. The permanent master keys have a **4** cut and do not operate yet.

In the next view, the CMK, which always has a $5\frac{1}{2}$ (deep) cut, is inserted and turned. The diameter of the construction pockets in the plug is too small for any top pins or master pins to fall in as plug rotates.

In the third view, rotating the change key, cut to a **1**, **2** or **3**, lets the tiny balls drop into the pocket in the plug the first time the key turns in either direction.

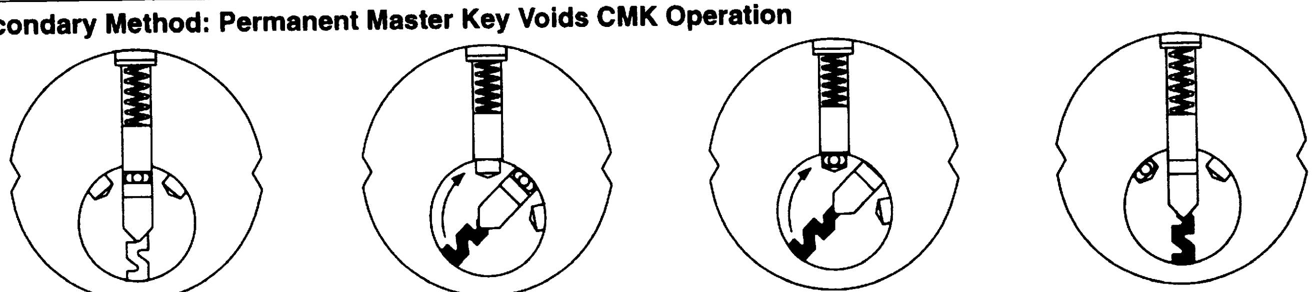
In the last view, the balls have been captured in the pocket and there is no longer enough material in the chamber to allow the deep CMK bitting to create a shear line.

At this point, the only way to program the CMK back into the cylinder is to dismantle the cylinder, remove the balls from the pocket and place them back into the pin stack.

The four views below illustrate the option of placing the balls on the master pin rather than the bottom pin. When the cylinder is assembled this way, the permanent master key, rather than the change key, is what voids the CMK.

If you follow the master keying rules on the next page, the cylinder can be assembled either way.

Secondary Method: Permanent Master Key Voids CMK Operation



Rest position | CMK operates freely either direction | Permanent system's master key turned either direction "loses" CM balls into pocket | CMK inserted

Construction Master Keying

Limitations and Requirements

Construction master keying is very convenient but it reduces the overall expansion of a keying system. Also, it must be specified on the initial order for the system. Otherwise, the special CMK bitting may not be available later in the system's life.

The diameter of the balls is .045". This forces a direct relationship to exist between the CMK and the TMK. .045" is three increments in Pre-System 70 and $1^1/2$ increments in System 70.

System 70

The diameter of the ball bearings makes $5^1/2$ (symbolized by "%") the only practical depth for the CMK and forces the TMK to be a 4. The change keys can only be 1, 2 and 3. Neither the 5 nor the 6 is mechanically possible to use. Even if they were, they would be only half an increment away from the CMK.

Key Bitting Array

CMK	1	2	5	4	6	%
TMK	1	2	5	4	6	4
Progression Possibilities	2	3	6	5	1	1
	3	4	1	6	2	2
	4	5	2	1	3	3
	5	6	3	2	4	
	6	1	4	3	5	

5 x 5 x 5 x 5 x 5 x 3 = 9,375
Theoretical Changes Per Keyway

When the CMK column of the KBA is multiplied by the rest of the columns, you can see that only $^3/5$ of the system is available. In other words, 40% of the system is sacrificed to provide the convenience of construction master keying.

Pre-System 70

The diameter of the ball bearings makes the deepest cut (9 in Russwin and 0 in Corbin) the most practical depth for the CMK and forces the TMK to be three increments shallower (6 in Russwin and 7 in Corbin.) The change keys can only be the three progressives shallower than the TMK. Neither 8 nor 9 is mechanically possible to use. Even if they were, they would be only one increment away from the CMK.

Key Bitting Array

CMK	1	4	9	7	2	9
TMK	1	4	9	7	2	6
Progression Possibilities	3	6	1	9	4	0
	5	8	3	1	6	2
	7	0	5	3	8	4
	9	2	7	5	0	

4 x 4 x 4 x 4 x 4 x 3 = 3,072
Theoretical Changes Per Keyway

When the CMK column of the KBA is multiplied by the rest of the columns, you can see that only $^3/4$ of the system is available. In other words, 25% of the system is sacrificed to provide the convenience of construction master keying.

When a CMK must be added to an existing Pre-System 70 keying system that has no bittings available to follow these rules, a special extra-deep bitting may sometimes be used. A Corbin 11 or Russwin 10 depth on the CMK where an 8 (Corbin) or 7 (Russwin) is used on the TMK. These depths are shown in Appendix A.

Interchangeable Core Alternative

Corbin Russwin interchangeable cores can be construction master keyed. However, a construction core program was begun in 1993. With this option, a temporary group of keyed alike cores is furnished for IC jobs, rather than construction master keying the permanent cores.

Construction cores offer two strong advantages to the building owner:

1. No additional combinations are lost because there is no construction master keying.
2. Security is improved because the construction keys have no direct or predictable relationship to the permanent master keys and are usually even on a different key section.

General Information

Pin Change Notice

Because of the many key classes, depth systems and plug diameters, Corbin Russwin has consolidated its pin lengths for decades. This means that if a .160" pin was required for one set of specs, a .161" for another and .162" for yet another, only the .161" would be produced. It would serve triple duty.

With the sale of the Corbin Cabinet Lock (CCL) division in 1985 and the correction to the N Class bottom pins in 1990, it was time to undertake a new study for pin consolidation in creating the new pin kits introduced in 1993.

The new pins and kits on the next few pages, together with the pins listed in Appendix A reflect the consolidation determined to be necessary in the 1993 study. *Nothing has changed in keys or cylinder plugs.* Only the pin sizes were reevaluated to get closer to the nominal length. This results in smoother operating cylinders.

Impact on Pin Kits

If you are using one of the many different Corbin or Russwin original pin kits prior to the PK series kits (see page 56), you should relabel its compartments with the new lengths or discard it and purchase a new kit. Old lengths not carried over to the 1993 consolidation will be discontinued when inventory is depleted.

Aftermarket Colored Pin Kits

Many fine quality aftermarket pin kits are available to locksmiths. Most use colored pins. Such kits are practical if you service different manufacturers' cylinders. There are some disadvantages, however, when used for Corbin Russwin cylinders.

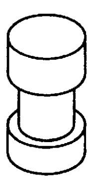
- The charts these kits have for Corbin Russwin are sometimes inaccurate and always incomplete. 22 different charts would be necessary to cover all Corbin Russwin variations in bitting class / depth system / plug diameter, as provided in Appendix A!
- Color pins can be a security risk, since the bottom pins can be viewed with an otoscope through the keyway and decoded.
- The geometry of these pins usually differs from that of original Corbin Russwin pins. Corners are often sharper, producing an occasional bind, and a need to shorten the pin by one size (.003" or .005").
- Some kits do not have top pins long enough to accommodate the longest build-up pins for Corbin Russwin interchangeable core and master ring cylinders.
- Sizing is generally in even increments of .003" or .005". For this reason, the ideal size may NOT be the size closest to the consolidated size in Appendix A.

To create the best charts for your .003" or .005" kits, refer to the "nominal" or ideal pin length column in each section of the next two pages. The second number is the size used in older pin kits and the last size is the size from the 1993 consolidation.

Pin Options

Spool Top Pins

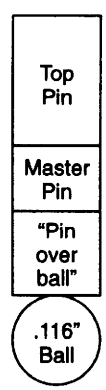
Spool top pins are used to increase pick resistance. They are available in three sizes, designated by the letter "J" followed by the length in thousandths of an inch. They are: J171, J230, J320 and J415.



Do not put spool top pins in all chambers. Always use a standard top pin in the back chamber to hold the plug in position until the key is fully inserted.

Ball Bearing Bottom Pins

You will find a ball bearing at the bottom of pin stacks in some or all chambers of Corbin and Russwin cylinders manufactured from about 1902 until the mid 1960's. The oldest cylinders have the ball in every chamber. The number of balls was gradually reduced until only the front two chambers had them.



The purpose of the balls was to reduce wear on the pins. As harder brass became available, wear became less of a factor, so usage of the balls in the pin stacks was eventually phased out. However, the balls themselves are still available because they are used in other Corbin Russwin products.

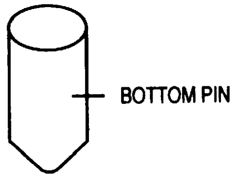
If you have a problem with pin wear in high traffic cylinders, consider rekeying the cylinder with these balls. They are compatible with all current Corbin Russwin cylinders except high security.



Order them in multiples of 100 from your Corbin Russwin distributor. The diameter is .116" so select the size of the pin over the ball accordingly.

Note: Do not use a ball in every chamber. This creates a security risk because a bypass tool called a "lock comb" can be used to raise all balls to the shear line and operate the cylinder.

Bottom Pin Size Comparison



These facing pages allow you to track the pin changes between the 1961 consolidation and the 1993 consolidation but they are most useful for selecting the proper pin when using one of the aftermarket pin kits with colored pins graduated in increments of .003" or .005".

Note: DH Class System 70 is the same as Z Class System 70.

The LABEL column is the numerical size of the pin. The NOM. column is the nominal dimension you want to get closest to with aftermarket pins. The OLD column is the 1961 consolidation and the '93 column is the currently manufactured size listed in Appendix A. An interim correction size is shown for N Class when the errors of 1961 were discovered and corrected in 1990.

Z Class

Plug	Label	Nom.	Old	'93
509	1 / 1	161	160	160
509	2	175	174	175
509	3 / 2	189	189	189
509	4	203	203	203
509	5 / 3	217	218	217
509	6	231	231	231
509	7 / 4	245	246	245
509	8	259	259	260
509	9 / 5	273	273	273
509	0	287	287	287
509 System 70	6	301	301	301
552	1 / 1	204	203	203
552	2	218	218	217
552	3 / 2	232	231	231
552	4	246	246	245
552	5 / 3	260	259	260
552	6	274	273	273
552	7 / 4	288	287	288
552	8	302	301	301
552	9 / 5	316	315	316
552	0	330	330	330
552 System 70	6	344	345	344

X Class

Plug	Label	Nom.	Old	'93
509	1 / 1	171	171	171
509	2	185	185	186
509	3 / 2	199	198	198
509	4	213	212	213
509	5 / 3	227	226	228
509	6	241	241	241
509	7 / 4	255	256	256
509	8	269	269	269
509	9 / 5	283	284	283
509	0	297	297	297
509 System 70	6	311	311	311
552	1 / 1	214	214	213
552	2	228	228	228
552	3 / 2	242	241	241
552	4	256	256	256
552	5 / 3	270	269	269
552	6	284	284	283
552	7 / 4	298	297	297
552	8	312	311	311
552	9 / 5	326	326	326
552	0	340	340	340
552 System 70	6	354	354	354

When two depth labels are given above, the one before the slash is Pre-system 70 and the one after the slash is System 70.

DH Class Pre-System 70

Plug	Label	Nom.	Old	'93
509	0	159	160	160
509	1	174	174	175
509	2	189	189	189
509	3	204	203	203
509	4	219	218	220
509	5	234	234	234
509	6	249	249	248
509	7	264	263	263
509	8	279	278	279
509	9	294	293	294
552	0	202	203	203
552	1	217	218	217
552	2	232	231	231
552	3	247	246	248
552	4	262	263	263
552	5	277	278	276
552	6	292	293	291
552	7	307	307	307
552	8	322	322	322
552	9	337	337	337

N Class Pre-System 70

Plug	Label	Nom.	Old	'90	'93
509	0	171	167	171	171
509	1	186	182	185	186
509	2	201	198	203	201
509	3	216	212	218	217
509	4	231	226	231	231
509	5	246	241	246	245
509	6	261	256	263	260
509	7	276	273	278	276
509	8	291	287	293	291
509	9	306	301	307	307
552	0	214	210	213	213
552	1	229	226	228	228
552	2	244	241	246	245
552	3	259	256	259	260
552	4	274	269	273	273
552	5	289	284	287	288
552	6	304	301	304	305
552	7	319	315	319	320
552	8	334	330	334	334
552	9	349	345	349	349

N Class System 70

Plug	Label	Nom.	Old	'90	'93
509	1	165	160	167	165
509	2	193	189	193	193
509	3	221	218	221	220
509	4	249	246	249	248
509	5	277	273	278	276
509	6	305	301	307	305
552	1	208	203	210	208
552	2	236	231	237	236
552	3	264	259	263	263
552	4	292	287	293	291
552	5	320	315	322	320
552	6	348	345	349	349

752 Class

Plug	Label	Nom.	Old	'93
509	0	187	189	186
509	1	207	210	208
509	2	227	228	228
509	3	247	246	248
509	4	267	266	267
509	5	287	287	288
509	6	307	307	307
552	0	230	231	231
552	1	250	252	251
552	2	270	269	269
552	3	290	293	291
552	4	310	311	311
552	5	330	330	330
552	6	350	349	349

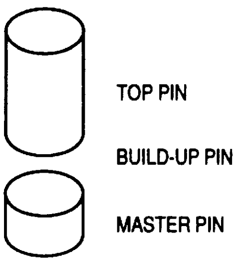
852 Class

Plug	Label	Nom.	Old	'93
509	0	192	193	193
509	1	212	212	213
509	2	232	231	231
509	3	252	252	251
509	4	272	273	273
509	5	292	293	291
509	6	312	311	311
552	0	235	234	234
552	1	255	256	256
552	2	275	273	276
552	3	295	293	294
552	4	315	315	316
552	5	335	334	334
552	6	355	354	354

A Class

Plug	Label	Nom.	Old	'93
509	0	177	177	177
509	1	197	198	198
509	2	217	218	217
509	3	237	237	236
509	4	257	256	256
509	5	277	278	276
509	6	297	297	297
552	0	220	218	220
552	1	240	241	241
552	2	260	259	260
552	3	280	278	279
552	4	300	301	301
552	5	320	319	320
552	6	340	340	340

Top Pin Size Comparison



This page provides the same information for master and build-up pins as the facing page does for bottom pins. Headings for the small columns have been explained on the facing page.

Master and build-up pins are based on the increment. Since different key classes may share the same increment, there are fewer lists than there are for bottom pins. M = master pin and BU = build-up pin.

.014"/.028" Increment

Pre-System 70 Corbin and all System 70

Plug	Label	Nom.	Old	93
both	M2 / M1	28	28	28
both	M3	42	42	42
both	M4 / M2	56	56	56
both	M5	70	69	70
both	M6 / M3	84	83	84
both	M7	98	99	98
both	M8 / M4	112	112	112
both	M9	126	127	126
both	M5	140	140	140
509	BU -9	37	37	37
509	BU -8 / -4	51	51	51
509	BU -7	65	65	66
509	BU -6 / -3	79	79	80
509	BU -5	93	93	93
509	BU -4 / -2	107	107	107
509	BU -3	121	121	120
509	BU -2 / -1	135	135	135
509	BU -1	149	149	149
509	BU 0	163	163	163
509	BU +1	177	177	177
509	BU +2 / +1	191	191	192
509	BU +3	205	205	205
509	BU +4 / +2	219	219	218
509	BU +5	233	233	232
509	BU +6 / +3	247	247	247
509	BU +7	261	261	261
509	BU +8 / +4	275	275	275
509	BU +9	289	289	289
509	BU +5	303	303	303
552	BU -8 / -4	30	30	30
552	BU -7	44	45	45
552	BU -6 / -3	58	59	58
552	BU -5	72	73	72
552	BU -4 / -2	86	87	87
552	BU -3	100	102	100
552	BU -2 / -1	114	116	114
552	BU -1	128	129	128
552	BU 0	142	143	142
552	BU +1	156	157	156
552	BU +2 / +1	170	172	171
552	BU +3	184	185	184
552	BU +4 / +2	198	199	198
552	BU +5	212	213	212
552	BU +6 / +3	226	227	226
552	BU +7	240	241	241
552	BU +8 / +4	254	255	253
552	BU +9	268	268	268
552	BU +5	282	282	282

.015" Increment

Pre-System 70 Russwin

Plug	Label	Nom.	Old	93
both	M2	30	30	30
both	M3	45	45	45
both	M4	60	59	60
both	M5	75	75	75
both	M6	90	90	90
both	M7	105	105	105
both	M8	120	121	120
both	M9	135	135	135
509	BU -9	28	28	28
509	BU -8	43	42	42
509	BU -7	58	56	58
509	BU -6	73	73	72
509	BU -5	88	87	87
509	BU -4	103	102	103
509	BU -3	118	116	118
509	BU -2	133	132	133
509	BU -1	148	147	149
509	BU 0	163	163	163
509	BU +1	178	177	177
509	BU +2	193	191	192
509	BU +3	208	207	208
509	BU +4	223	222	222
509	BU +5	238	237	238
509	BU +6	253	252	253
509	BU +7	268	268	268
509	BU +8	283	282	282
509	BU +9	298	297	298
552	BU -7	37	37	37
552	BU -6	52	53	51
552	BU -5	67	69	66
552	BU -4	82	83	82
552	BU -3	97	99	98
552	BU -2	112	112	112
552	BU -1	127	127	126
552	BU 0	142	143	142
552	BU +1	157	157	156
552	BU +2	172	172	171
552	BU +3	187	188	187
552	BU +4	202	203	202
552	BU +5	217	219	218
552	BU +6	232	233	232
552	BU +7	247	247	247
552	BU +8	262	263	261
552	BU +9	277	278	277

.020" Increment

Russwin 752, 852 and A Class

Plug	Label	Nom.	Old	93
both	M2	40	42	40
both	M3	60	59	60
both	M4	80	79	80
both	M5	100	99	100
both	M6	120	121	120
509	BU -6	43	42	42
509	BU -5	63	65	63
509	BU -4	83	83	82
509	BU -3	103	102	103
509	BU -2	123	121	122
509	BU -1	143	143	142
509	BU 0	163	163	163
509	BU +1	183	185	184
509	BU +2	203	203	202
509	BU +3	223	222	222
509	BU +4	243	241	241
509	BU +5	263	263	261
509	BU +6	283	282	282
552	BU -5	42	42	42
552	BU -4	62	65	63
552	BU -3	82	83	82
552	BU -2	102	102	103
552	BU -1	122	121	122
552	BU 0	142	143	142
552	BU +1	162	163	163
552	BU +2	182	185	184
552	BU +3	202	203	202
552	BU +4	222	222	222
552	BU +5	242	241	241
552	BU +6	262	263	261

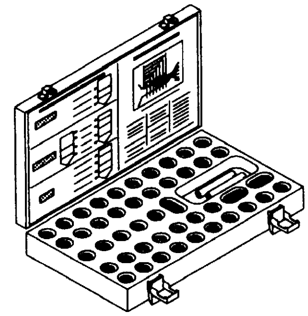
When two depth labels are given above, the one before the slash is Pre-system 70 and the one after the slash is System 70.

Pin Kits -- Old and New

Yesterday's pin kits are often unusable for today's Corbin Russwin cylinders. Most calls to the factory for help are from institutional locksmiths who are trying unsuccessfully to key a new Corbin Russwin cylinder with an old pin kit that the institution has had for a long time. If you are trying to pin modern Corbin Russwin cylinders with old pin kits, there will be times when the old kit may not work. Here are the most common reasons.

- Most kits were specific to one key class and depth system and your cylinder may require different specs.
- Most kits were limited to one plug diameter and today's complete product offering includes two diameters.
- Kits which were supposed to include Russwin N Class keyways had the wrong size bottom pins.
- The design of certain kits for interchangeable core and master ring overlooked some sizes of build-up pins.

Below is a listing of all known original Corbin and Russwin pin kits and what they are actually capable of handling. In many cases, this will be less than the kit claims to handle, especially where N Class keyways are concerned, for reasons stated above. The approximate dates of their offering are also given.



We strongly recommend the purchase of one of the new PK Series pin kits introduced in 1993 if you routinely combinate Corbin Russwin cylinders. The new kits appear first in the listing below. Their exact contents are listed on the next page.

Kit Number	Bitting Classes	Depth System	Plug Diameter	Remarks
PK-70-HS	Z, DH	70	.552"	all high security cylinders including Brink, blockout and IC, plus .552" conventional
PK-70-N	N	70	both	all cylinders with these keyways using System 70 depths
PK-70-X	X	70	both	all cylinders with these keyways using System 70 depths
PK-70-ZDH	Z, DH	70	both	all cylinders with these keyways using System 70 depths
PK-1070	all	all	both	deluxe kit for all non-high security cylinders
03-1/2	X, Z	Pre-70	.509"	master, build-up & top pins only (1967 - 75)
53	X, Z	Pre-70	X .509", Z .552"	bottom & master pins (1967 - 75)
53-MR	X, Z	Pre-70	.552"	master, build-up & top pins only (1967 - 75)
A	981	Pre-70	.552"	master, regular & ball bearing bottom pins (1955 - 66)
B	981	Pre-70	.552"	ball bearing bottom pins only (1955 - 66)
C	DH, 981	Pre-70	.552"	bottom & master pins; wrong N Class bottom pins (1967 - 75)
C-1	X, Z	Pre-70	.509"	no build-up pins longer than +2 (1976 - 91)
C-2	X, Z	70	Z both, X .552"	IC & master ring, except X Class .509" plug (1976 - 91)
C-3	X, Z	both	.552"	master ring, missing 7 sizes (1976 - 91)
C-4	X, Z	both	.509"	complete set of master & build-up pins only; no bottom pins (1976 - 91)
C-6	X, Z	both	both	deluxe kit for all Corbin; Chart shows wrong X Pre-70 .552" BU (1986 - 92)
C-10	Z	both	.552"	no IC or master ring but includes spare cylinder parts (1976 - 91)
E-8	-----	------	-----	for IC N Class but all bottom pins are too short (1971 - 75)
E-10	DH, 981	both	.552"	includes spare cylinder parts; wrong N class bottom pins
F-8	DH	Pre-70	.509"	for IC but has no build-up pins longer than +2 (1971 - 75)
K-1	X	Pre-70	.509"	bottom pins & springs only (1955 - 66)
K-4	S	n/a	.398"	Corbin small pin residential knob locks (1957 - 66)
K-51	Z	Pre-70	.552"	bottom pins and spring only (1961 - 66)
L-2	X, Z	70	Z both, X .552"	IC & master ring, except X Class .509" plug (1976 - 85)
L-3	X, Z	both	.552"	master ring, missing 7 sizes (1976 - 85)
L-4	X, Z	both	.509"	complete set of master & build-up pins only; no bottom pins 1976 - 85
L-5	CCL small	4R, B4R	.398"	for CCL small pin cabinet locks (1976 - 85)
MK-2	X	Pre-70	.509"	bottom, master and ball bearing bottom (1955 - 1966)
MK-52	Z	Pre-70	.552"	bottom, master and ball bearing bottom (1961 - 66)
MR-D	DH, N, 981	Pre-70	.552"	master, build-up & top pins only (1967 - 75)
P-82	X	Pre-70	.509"	IC missing build-up pins beyond +1 (1971 - 75)
P-85	Z	Pre-70	.509"	IC missing build-up pins beyond +1 (1971 - 75)
R-1	DH	Pre-70	.509"	IC missing build-up pins beyond +2; wrong N Class bottom pins (1971 - 75)
R-2	DH	70	both	IC and master ring; missing +4 build-up pin for .509" plug (1971 - 75)
R-3	D, H, 981	Pre-70	.552"	master ring; missing #5 master pin and +5 build-up pin (1976 - 91)
R-6	DH, 981	both	both	deluxe Russwin kit. Wrong N Class bottom pins until late '92. (1986 - 93)
UB	S	n/a	.398"	Russwin small pin residential knob locks (1957 - 66)
W70-8	Hi Sec.	70	.552"	high security, including IC. Wrong build-up pins until mid '90. (1979 - 92)
W70A	Hi Sec.	70	.552"	high security only; no conventional pins for IC, blockout or Brink (1976 - 91)

Pin Kits -- Contents of PK Series

PK-70-ZDH

Size	Qty
L160	72
L189	72
L203	72
L217	72
L231	72
L245	72
L260	72
L273	72
L288	72
L301	72
L316	72
L344	72
M028	200
M030	200
M051	100
M056	200
M058	100
M060	100
M080	100
M084	200
M087	100
M107	72
M112	100
M114	72
M135	72
M140	100
M142	72
M163	72
M171	144
M192	72
M198	72
M218	72
M226	72
M247	72
M253	72
M275	72
M282	72
M303	72
M320	72
J172	72
Tools:	
.509" follower	1
.552" follower	1
tweezer	1
CT-11 key gauge	1
Other Parts:	
172F21-7	100
603F20-7	100
217F44-2	50
CM balls	300
438F41-8	20

PK-70-N

Size	Qty
L165	72
L193	72
L208	72
L220	72
L236	72
L248	72
L263	72
L276	72
L291	72
L305	72
L320	72
L349	72
M028	200
M030	200
M051	100
M056	200
M058	100
M060	100
M080	100
M084	200
M087	100
M107	72
M112	100
M114	72
M135	72
M140	100
M142	72
M163	72
M171	144
M192	72
M198	72
M218	72
M226	72
M247	72
M253	72
M275	72
M282	72
M303	72
M320	72
J172	72
Tools:	
.509" follower	1
.552" follower	1
tweezer	1
CT-21 key gauge	1
Other Parts:	
172F21-7	100
603F20-7	100
217F44-2	50
CM balls	300
438F41-8	20

PK-70-X

Size	Qty
L171	72
L198	72
L213	72
L228	72
L241	72
L256	72
L269	72
L283	72
L297	72
L311	72
L326	72
L354	72
M028	200
M030	200
M051	100
M056	200
M058	100
M060	100
M080	100
M084	200
M087	100
M107	72
M112	100
M114	72
M135	72
M140	100
M142	72
M163	72
M171	144
M192	72
M198	72
M218	72
M226	72
M247	72
M253	72
M275	72
M282	72
M303	72
M320	72
J172	72
Tools:	
.509" follower	1
.552" follower	1
tweezer	1
CT-11 key gauge	1
Other Parts:	
172F21-7	100
603F20-7	100
217F44-2	50
CM balls	300
438F41-8	20

PK-1070

Size	Qty
L160	72
L165	72
L171	72
L175	72
L177	72
L186	72
L189	72
L193	72
L198	72
L201	72
L203	72
L208	72
L213	72
L217	72
L220	72
L228	72
L231	72
L234	72
L236	72
L241	72
L245	72
L248	72
L251	72
L256	72
L260	72
L263	72
L267	72
L269	72
L273	72
L276	72
L279	72
L283	72
L288	72
L291	72
L294	72
L297	72
L301	72
L305	72
L307	72
L311	72
L316	72
L320	72
L322	72
L326	72
L330	72
L334	72
L337	72
L340	72
L344	72
L349	72
L354	72
M028	200
M030	200
M037	100
M040	100
M042	100
M045	100
M051	100
M056	200
M058	100
M060	100
M063	100
M066	100
M070	100
M072	100
M075	100
M080	100
M082	100
M084	100
M087	100
M090	100
M093	72
M098	72
M100	72
M103	72
M105	72
M107	72
M112	72
M114	72
M118	72
M120	72
M122	72
M126	72
M128	72
M133	72
M135	72
M140	72
M142	72
M149	72
M156	72
M163	72
M171	72
M177	72
M184	72
M187	72
M192	72
M198	72
M202	72
M205	72
M208	72
M212	72
M218	72
M222	72
M226	72
M232	72
M238	72
M241	72
M247	72
M253	72
M261	72
M268	72
M275	72
M277	72
M282	72
M289	72
M298	72
M303	72
M320	72
J172	72
Tools:	
.509" follower	1
.552" follower	1
tweezer	1
Other Parts:	
172F21-7	100
603F20-7	100
217F44-2	25
CM balls	300

PK-70-HS

Size	Qty
L231	72
L260	72
L288	72
L316	72
L344	72
M028	200
M030	100
M056	200
M058	100
M084	100
M087	100
M112	72
M114	72
M142	72
M171	72
M198	72
M226	72
M253	72
High Security Pins:	
407T41-4242	20
407T41-4270	20
407T41-4298	20
407T41-4326	20
407T41-4354	20
407T42-4242	20
407T42-4270	20
407T42-4298	20
407T42-4326	20
407T42-4354	20
407T31-4097	20
407T31-4125	20
407T31-4153	20
407T32-4097	20
407T32-4125	20
407T32-4153	20
407T33-4097	20
407T33-4125	20
407T33-4153	20
407T43-4193	50
407T43-4158	100
Tools:	
tweezer	1
Other Parts:	
172F21-7	100
603F20-7	100
217F44-2	50

1993 Consolidation -- Numerical Listing

Use this listing to verify the availability of any particular pin. Distributors can also use this list as a guideline for inventory levels. The more uses a given pin has, or the more popular a key class and depth system it is used for, the more you should stock.

Special Canadian usage is not reflected in these lists.

Pins are sold in vials of 100. The "catalog number" of a pin consists of a letter followed by the actual measurement of the pin in thousandths of an inch. L Series pins are bottom pins. M Series are master, build-up and top. J Series are spool top pins for pick resistance.

When ordering a vial of pins, use the correct part number:

bottom pins	553F48-4 + length
master/build-up/top	553F49-2 + length
spool top pins	553F50-2 + length

Example: a #1 master pin for System 70 has a catalog number of M028. To order 200 of these pins, order a quantity of <u>two</u> 553F49-2028.

Bottom Pins

After each pin size is a shorthand listing of the key class(es) and plug diameter(s) to which it applies. Most of this shorthand is clear but "7" designates 752 Class and "8" designates 852 Class. DH in this listing also includes 981 class. "70" designates System 70.

L160	DH, Z, ZDH70 509
L165	N70 509
L171	X, X70, N 509
L175	Z 509, DH 509
L177	A 509
L186	X, N, 7 509
L189	Z, ZDH70, DH 509
L193	8, N70 509
L198	A, X, X70 509
L201	N 509
L203	DH, Z 509; DH, Z 552
L208	7 509, N70 552
L213	X, 8 509; X, X70, N 552
L217	A, N, Z, ZDH70 509; DH, Z 552
L220	DH, N70 509; A 552
L228	X, X70, 7 509; X, N 552
L231	Z, N, 8 509; DH, Z, ZDH70, 7 552
L234	DH 509, 8 552
L236	A 509, N70 552
L241	X 509; A, X, X70 552
L245	N, Z, ZDH70 509; N, Z 552
L248	N70, 7, DH 509; DH 552
L251	8 509, 7 552
L256	X, X70, A 509; X, 8 552
L260	N, Z 509; A, N, Z, ZDH70 552
L263	DH 509; N70, DH 552
L267	7 509
L269	X 509; X, X70, 7 552
L273	Z, ZDH70, 8 509; Z, N 552
L276	A, N, N70 509; 8, DH 552
L279	DH 509, A 552
L283	X, X70 509; X 552
L287	Z 509
L288	7 509; N, Z, ZDH70 552
L291	N, 8 509; N70, DH, 7 552
L294	DH 509, 8 552
L297	A, X 509; X, X70 552
L301	ZDH70 509; A, Z 552
L305	N70 509, N 552
L307	N, 7 509; DH 552
L311	X70 , 8 509; X, 7 552
L316	Z, ZDH70, 8 552
L320	A, N, N70 552
L322	DH 552
L326	X 552 / X70
L330	Z, 7 552
L334	N, 8 552
L337	DH 552
L340	A, X 552
L344	ZDH70 552
L349	N, N70, 7 552
L354	X70, 8 552

Spool Pins

The purpose of these optional pins is covered earlier in this unit.

J171	standard cylinders
J240	master ring cylinders
J320	padlocks
J415	to block master ring

Top Pins

This list includes master pins, build-up pins and top pins. The shorthand description begins with the increment in thousandths of an inch. Corbin Pre-System 70 is 14, Russwin Pre-System 70 is 15, old Russwin is 20. System 70 is 28, so many of the pins listed as 14 double as System 70 pins.

After the increment number will be either the plug diameter for build-up pins or the letter M to designate a master pin.

M028	14/28M, 15–509
M030	14–552, 15M
M037	14–509, 15–552
M040	20M
M042	14M, 14–552, 15–509, 20–509, 20–552
M045	15M
M051	14–509, 15–552
M056	14/28M
M058	14–552, 15–509
M060	15M, 20M
M063	20–509, 20–552
M066	14–509, 15–552
M070	14M
M072	14–552, 15–509
M075	15M
M080	14–509, 20M
M082	15–552, 20–509, 20–552
M084	14/28M
M087	14–552, 15–509
M090	15M
M093	14–509
M098	14M, 15–552
M100	14–552, 20M
M103	15–509, 20–509, 20–552
M105	15M
M107	14–509
M112	14/28M, 15–552
M114	14–552
M118	15–509
M120	14–509, 15M, 20M
M122	20–509, 20–552
M126	14M, 15–552
M128	14–552
M133	15–509
M135	14–509, 15M
M140	14/28M
M142	all–552
M149	14–509, 15–509
M156	14–552, 15–552
M163	all–509, 20–552
M171	14–552, 15–552
M177	14–509, 15–509
M184	14–552, 20–509, 20–552
M187	15–552
M192	14–509, 15–509
M198	14–552
M202	15–552, 20–509, 20–552
M205	14–509
M208	15–509
M212	14–552
M218	14–509, 15–552
M222	15–509, 20–509, 20–552
M226	14–552
M232	14–509, 15–552
M238	15–509
M241	14–552, 20–509, 20–552
M247	14–509, 15–552, IC top
M253	14–552, 15–509
M261	14–509, 15–552, 20–509, 20–552
M268	14–552, 15–509
M275	14–509
M277	15–552
M282	15–509, 20–509, 28–552
M289	14–509
M298	15–509
M303	14–509

Key Bitting and Pin Specifications

The next several pages contain pin lengths and key bitting specs for Corbin Russwin keys.

Use this section to:

- determine the key class and depth system of your keys
- select proper pin lengths when combinating cylinders
- verify the accuracy of the specs for the various after-market key coding machines
- verify the accuracy of keys cut in the field
- verify the accuracy of pins used in the field

Pin Sizes

Considerable space has already been devoted to explaining Corbin Russwin's consolidation of pin sizes. The pins listed in this Appendix represent the 1993 consolidation.

Discontinued Keyways

Keyways no longer offered by Corbin Russwin are included because the locks are still encountered by today's locksmiths.

Corbin Cabinet Lock Keyways

The CCL Division was sold in 1987.
Contact CCL Security Products
199 Whiting Avenue
New Britain, CT 06058
(203) 229-6199, fax 223-7601.



CANADA ONLY

Canadian Differences

Most Canadian Corbin Russwin keying systems generated before 1983 deviate from U.S. depth and pin specifications. If you are servicing Canadian cylinders, you need the special Canadian Supplement to this Appendix.

Key Machine Problems

All key machines should be checked for accuracy periodically by cutting a key, measuring its depths, and comparing the measurements to the specifications furnished by the manufacturer of the machine.

Manufacturers of these machines have not always had access to factory key bitting specs. They often had to measure keys in the field to reverse engineer the dimensions, and have met this challenge with varying degrees of accuracy. Whether the depth and spacing for your key coding machine is computerized, printed in the machine's manual or contained on a "code card", compare it with the appropriate page of this Appendix and correct it where necessary before using it for Corbin Russwin keys.

Correcting HPC Code Cards

The HPC 1200CM code machine uses code cards for depth and spacing. Because of that machine's popularity, we include the card numbers in this Appendix.

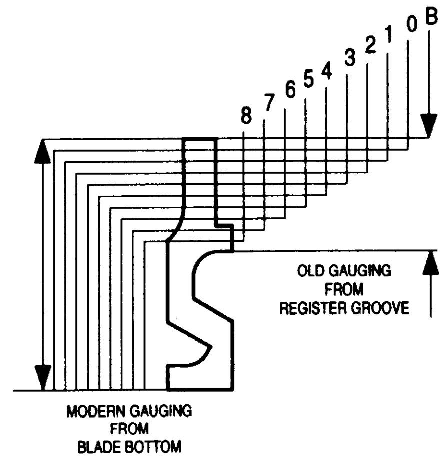
In 1994, HPC began to update and correct its code cards. The card numbers printed on the following pages are the newest, corrected cards.

Many older cards deviated from factory depths and should be replaced with the new version or corrected in the field before use.

Each card has the depths printed on it. Compare them with the depths printed here to determine where corrections are necessary. *After you are sure the machine is properly adjusted*, pencil in new depth marks. One of the modern white plastic micrometer cards supplied with the machine may ease this process. (Older ones were inaccurate.) Cut a key to the new depth marks and measure the results. Move the pencil marks if necessary. Make a new key and repeat the process. When all marks are correct, ink them in.

Russwin Peculiarities

Today, key bitting specs are based on a *root depth* which is the distance from the bottom of the blade to the bottom of the cut root. Originally, most Russwin key depths were gauged from a feature in the key section called a *register groove*.



This groove in original Russwin key blanks was tightly toleranced to match a corresponding ward in the keyway. The bottom of the key did not seat on the inside of the plug bore at the bottom of the keyway. The factory's key bitting machinery holds these blanks by the register groove, but key machines in the field cannot do this.

In 1961, all existing Russwin keyways and key sections were re-toleranced to be gauged from the bottom of the key blade. If you have trouble duplicating older Russwin keys, this may be the root of the problem. Keys may not operate properly even if the root depths match from one key to the other.

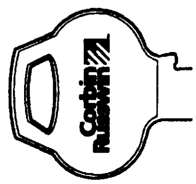
If this happens, it is most likely the result of using non-original key blanks, but it can also occur with original blanks, depending upon how old the cylinder, the pattern key and the key blank are.

Corbin Russwin Z and DH Class - System 70

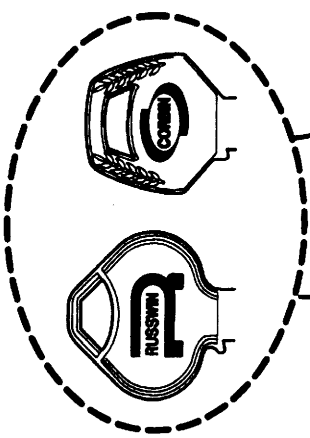
Applies to these keyways:							
	60	59A1	59B1	59C1	59D1	D1 thru D4 H1 thru H8	and restricted keyways not published for security reasons
	70	59A2	59B2	59C2	59D2	L1 thru L4	

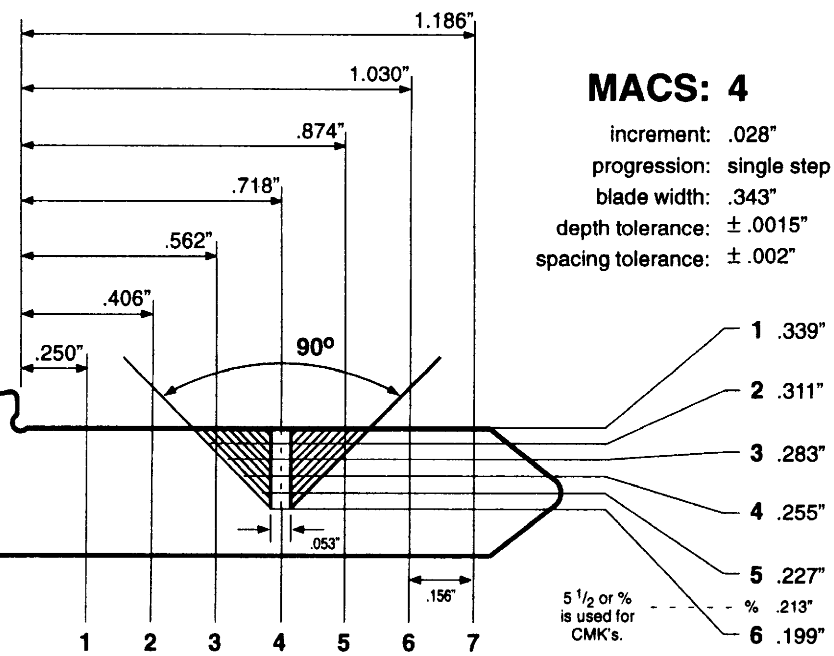
Code Card
CX6A
for HPC 1200CM Code Machine

HIGH SECURITY AVAILABLE



NEW BOW





Cuts are read and written bow to tip.

MACS: 4

increment: .028"
progression: single step
blade width: .343"
depth tolerance: ± .0015"
spacing tolerance: ± .002"

Pin Lengths (1993 Consolidation)

.509" Diameter Plug

Bottom Pins	Build-Up Pins	IC Top Pins
1 .160"	-4 .051"	1 .192"
2 .189"	-3 .080"	2 .163"
3 .217"	-2 .107"	3 .135"
4 .245"	-1 .135"	4 .107"
5 .273"	0 .163"	5 .080"
6 .301"	+1 .192"	6 .080"
	+2 .218"	
	+3 .247"	For non-control chambers use .247"
	+4 .275"	
	+5 .303"	

Master Pins
1 .028"
2 .056"
3 .084"
4 .112"
5 .140"

.552" Diameter Plug

Bottom Pins	Build-Up Pins
1 .203"	-4 .030"
2 .231"	-3 .058"
3 .260"	-2 .087"
4 .288"	-1 .114"
5 .316"	0 .142"
6 .344"	+1 .171"
	+2 .198"
	+3 .226"
	+4 .253"
	+5 .282"

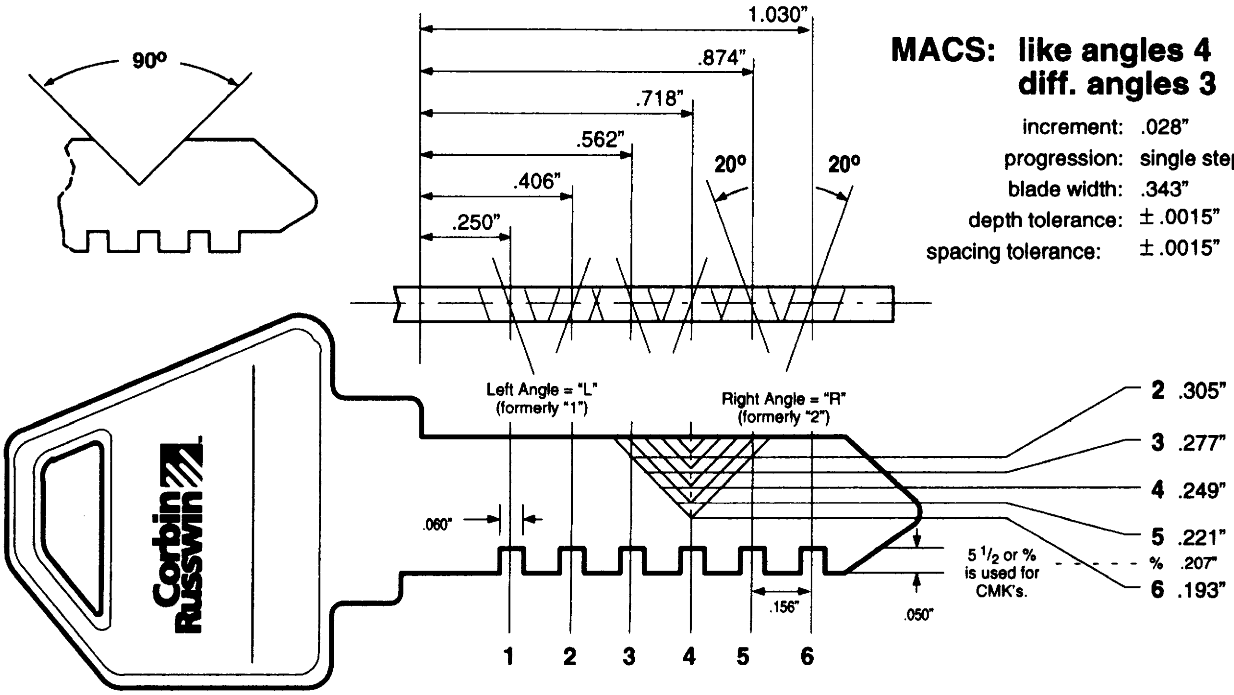
Standard Tumbler Spring	603F20-7
IC Tumbler Spring	172F21-7
Standard Top Pin	.171"
Spool Top Pin	.171"
Top Pin, PL5000 Padlock	.320"
Top Pin to Block Master Ring	.320"
5-Pin Spring Cover, brass	217F42-2
6-Pin Spring Cover, brass	217F44-2
7-Pin Spring Cover, brass	217F43-2
6-Pin spring Cover, stainless	314F88-7
7-Pin spring Cover, stainless	585F39-7

High Security - Z and DH Class, System 70 Only

Applies to these keyways:	60	59A1	59B1	59C1	59D1	D1 thru D4	and restricted keyways not published for security reasons	HPC Code Card
	70	59A2	59B2	59C2	59D2	H1 thru H8 L1 thru L4		(C)X1 with cutter CW1013

MACS: like angles 4
diff. angles 3

increment: .028"
progression: single step
blade width: .343"
depth tolerance: ±.0015"
spacing tolerance: ±.0015"



Cuts are read and written bow to tip.
Suffix angle to depth: 2L 3L 4R 6L 3R 2R
Originally written either as $2_1 3_1 4_2 6_1 3_2 2_2$ or 2(1) 3(1) 4(2) 6(1) 3(2) 2(2).

High Security Pins

The last 3 digits of the part number are the pin length, in thousandths of an inch, including the tab:

Bottom Pins

New	Old	Order Pin #
2L	2_1	407T41-4242
2R	2_2	407T42-4242
3L	3_1	407T41-4270
3R	3_2	407T42-4270
4L	4_1	407T41-4298
4R	4_2	407T42-4298
5L	5_1	407T41-4326
5R	5_2	407T42-4326
6L	6_1	407T41-4354
6R	6_2	407T42-4354

Master Pins

New	Old	Order Pin #
2L	2_1	407T31-4097
2R	2_2	407T32-4097
2S	2_3	407T33-4097
3L	3_1	407T31-4125
3R	3_2	407T32-4125
3S	3_3	407T33-4125
4L	4_1	407T31-4153
4R	4_2	407T32-4153
4S	4_3	407T33-4153

Top

Size	Order Pin #
1	407T43-4193
2	407T43-4158

Springs

Type	Number
Control Cham-bers	172F21-7
All Others	603F20-7

Conventional Pins (1993 Consolidation)

For control chambers of high security IC and 6th chamber of Blockout and Brink function:

Bottom Pins		Build-Up Pins		Master Pins		IC Top Pins	
2	.231"	-4	.030"	1	.028"	2	.198"
3	.260"	-3	.058"	2	.056"	3	.171"
4	.288"	-2	.087"	3	.084"	4	.142"
5	.316"	-1	.114"	4	.112"	5	.114"
6	.344"	0	.142"			6	.087"
		+1	.171"				
		+2	.198"				
		+3	.226"				
		+4	.253"				

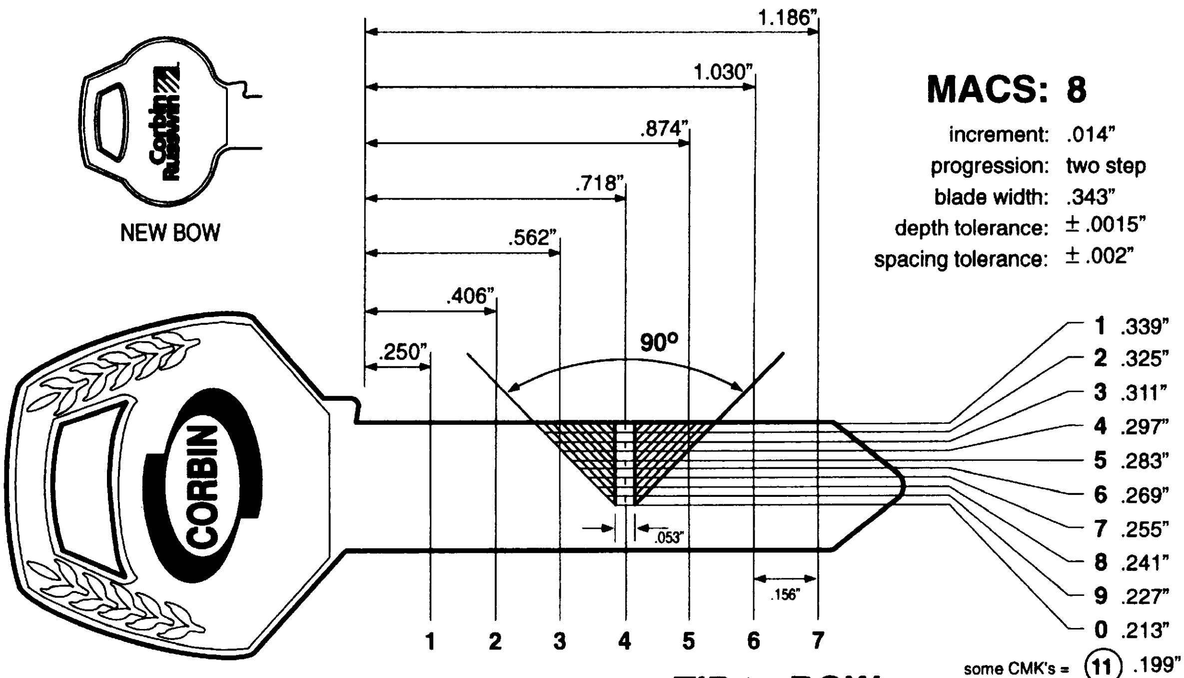
Top pin for 6th chamber of Blockout and Brink function cylinders: .171"

Corbin Z Class - Pre-System 70

Applies to these keyways:							
	60	**59A1**	**59B1**	**59C1**	**59D1**	**L1 thru L4**	and restricted keyways not published for security reasons
	70	**59A2**	**59B2**	**59C2**	**59D2**		

Code Card
C14
For HPC 1200CM Code Machine

HIGH SECURITY
NOT AVAILABLE



MACS: 8

increment: .014"
progression: two step
blade width: .343"
depth tolerance: ±.0015"
spacing tolerance: ±.002"

Cuts are read and written **TIP to BOW**.

Pin Lengths (1993 Consolidation)

.509" Diameter Plug

Bottom Pins	Build-Up Pins	IC Top Pins
1 .160"	-9 .037"	1 .192"
2 .175"	-8 .051"	2 .177"
3 .189"	-7 .066"	3 .163"
4 .203"	-6 .080"	4 .149"
5 .217"	-5 .093"	5 .135"
6 .231"	-4 .107"	6 .120"
7 .245"	-3 .120"	7 .107"
8 .260"	-2 .135"	8 .093"
9 .273"	-1 .149"	9 .080"
0 .288"	0 .163"	0 .066"
	+1 .177"	
	+2 .192"	For non-control chambers use .247"
	+3 .205"	
	+4 .218"	
	+5 .232"	
	+6 .247"	
	+7 .261"	
	+8 .275"	
	+9 .289"	

Master Pins
2 .028"
3 .042"
4 .056"
5 .070"
6 .084"
7 .098"
8 .112"
9 .126"

Standard Tumbler Spring	603F20-7
IC Tumbler Spring	172F21-7
Standard Top Pin	.171"
Spool Top Pin	.171"
Top Pin, PL5000 Padlock	.320"
Top Pin to Block Master Ring	.320"
5-Pin Spring Cover, brass	217F42-2
6-Pin Spring Cover, brass	217F44-2
7-Pin Spring Cover, brass	217F43-2
6-Pin spring Cover, stainless	314F88-7
7-Pin spring Cover, stainless	585F39-7

.552" Diameter Plug

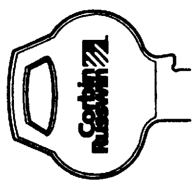
Bottom Pins	Build-Up Pins
1 .203"	-8 .030"
2 .217"	-7 .045"
3 .231"	-6 .058"
4 .245"	-5 .072"
5 .260"	-4 .087"
6 .273"	-3 .100"
7 .288"	-2 .114"
8 .301"	-1 .128"
9 .316"	0 .142"
0 .330"	+1 .156"
	+2 .171"
	+3 .184"
	+4 .198"
	+5 .212"
	+6 .226"
	+7 .241"
	+8 .253"
	+9 .268"

Russwin DH Class - Pre-System 70

Applies to these keyways: **D1 thru D4** **H1 thru H8** and restricted keyways not published for security reasons

Code Card **C42** For HPC 1200CM Code Machine

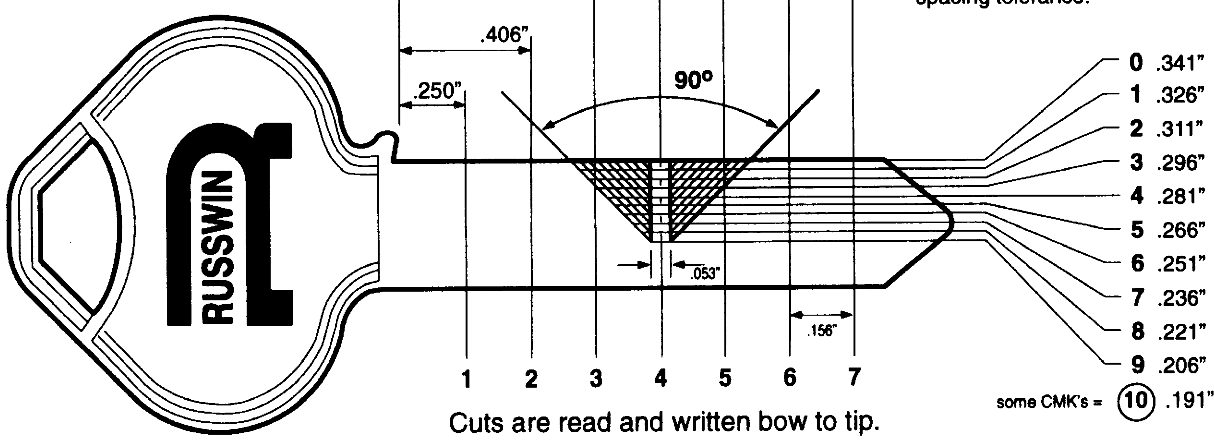
HIGH SECURITY — NOT AVAILABLE



NEW BOW

MACS: 7

increment: .015"
progression: two step
blade width: .343"
depth tolerance: ± .0015"
spacing tolerance: ± .002"



Cuts are read and written bow to tip.

Pin Lengths (1993 Consolidation)

.509" Diameter Plug

Bottom Pins	Build-Up Pins	IC Top Pins
0 .160"	-9 .028"	0 .192"
1 .175"	-8 .042"	1 .177"
2 .189"	-7 .058"	2 .163"
3 .203"	-6 .072"	3 .149"
4 .220"	-5 .087"	4 .133"
5 .234"	-4 .103"	5 .118"
6 .248"	-3 .118"	6 .103"
7 .263"	-2 .133"	7 .087"
8 .279"	-1 .149"	8 .072"
9 .294"	0 .163"	9 .058"
	+1 .177"	
	+2 .192"	For non-control chambers use .247"
	+3 .208"	
	+4 .222"	
	+5 .238"	
	+6 .253"	
	+7 .268"	
	+8 .282"	
	+9 .298"	

Master Pins
2 .030"
3 .045"
4 .060"
5 .075"
6 .090"
7 .105"
8 .120"
9 .135"

Standard Tumbler Spring	603F20-7
IC Tumbler Spring	172F21-7
Standard Top Pin	.171"
Spool Top Pin	.171"
Top Pin, PL5000 Padlock	.320"
Top Pin to Block Master Ring	.320"
5-Pin Spring Cover, brass	217F42-2
6-Pin Spring Cover, brass	217F44-2
7-Pin Spring Cover, brass	217F43-2
6-Pin spring Cover, stainless	314F88-7
7-Pin spring Cover, stainless	585F39-7

.552" Diameter Plug

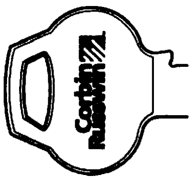
Bottom Pins	Build-Up Pins
0 .203"	-7 .037"
1 .217"	-6 .051"
2 .231"	-5 .066"
3 .248"	-4 .082"
4 .263"	-3 .098"
5 .276"	-2 .112"
6 .291"	-1 .126"
7 .307"	0 .142"
8 .322"	+1 .156"
9 .337"	+2 .171"
	+3 .187"
	+4 .202"
	+5 .218"
	+6 .232"
	+7 .247"
	+8 .261"
	+9 .277"

Corbin X Class - System 70

Applies to these keyways:	27 Series	67 Series	97	AR	BR
	57 Series	77 Series	99		BL

Code Card
(C)X5
for HPC 1200CM
Code Machine

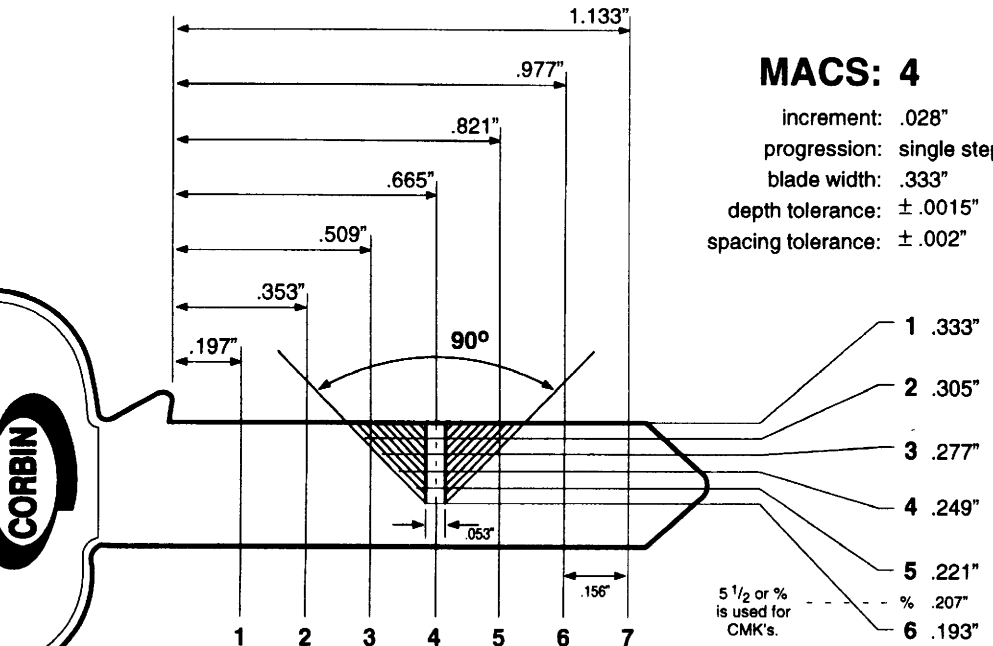
HIGH SECURITY
NOT AVAILABLE



NEW BOW

MACS: 4

increment: .028"
progression: single step
blade width: .333"
depth tolerance: ± .0015"
spacing tolerance: ± .002"



Cuts are read and written bow to tip.

Pin Lengths (1993 Consolidation)

.509" Diameter Plug

Bottom Pins	Build-Up Pins	IC Top Pins
1 .171"	-4 .051"	1 .192"
2 .198"	-3 .080"	2 .163"
3 .228"	-2 .107"	3 .135"
4 .256"	-1 .135"	4 .107"
5 .283"	0 .163"	5 .080"
6 .311"	+1 .192"	6 .080"
	+2 .218"	
	+3 .247"	For non-control chambers use .247"
	+4 .275"	
	+5 .303"	

Master Pins
1 .028"
2 .056"
3 .084"
4 .112"
5 .140"

.552" Diameter Plug

Bottom Pins	Build-Up Pins
1 .213"	-4 .030"
2 .241"	-3 .058"
3 .269"	-2 .087"
4 .297"	-1 .114"
5 .326"	0 .142"
6 .354"	+1 .171"
	+2 .198"
	+3 .226"
	+4 .253"
	+5 .282"

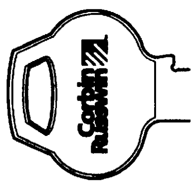
Standard Tumbler Spring	603F20-7
IC Tumbler Spring	172F21-7
Standard Top Pin	.171"
Spool Top Pin	.171"
Top Pin, PL5000 Padlock	.320"
Top Pin to Block Master Ring	.320"
5-Pin Spring Cover, brass	217F42-2
6-Pin Spring Cover, brass	217F44-2
7-Pin Spring Cover, brass	217F43-2
6-Pin spring Cover, stainless	314F88-7
7-Pin spring Cover, stainless	585F39-7

Corbin X Class - Pre-System 70

Applies to these keyways:					
	27 Series	67 Series	97	AR	BR
	57 Series	77 Series	99		BL

Code Card **(C)13** for HPC 1200CM Code Machine

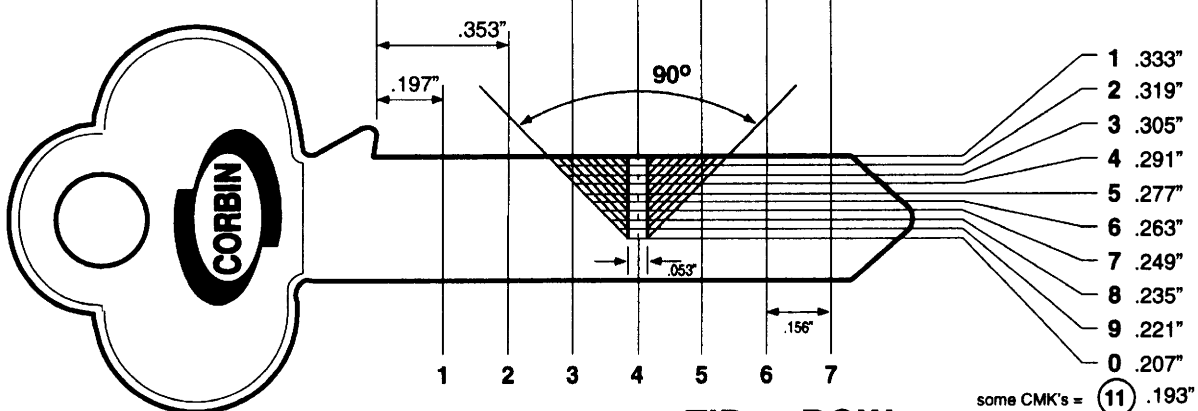
HIGH SECURITY NOT AVAILABLE



NEW BOW

MACS: 8

increment: .014"
progression: two step
blade width: .333"
depth tolerance: ±.0015"
spacing tolerance: ±.002"



Cuts are read and written **TIP to BOW.**

Pin Lengths (1993 Consolidation)

.509" Diameter Plug

Bottom Pins	Build-Up Pins	IC Top Pins
1 .171"	-9 .037"	1 .192"
2 .186"	-8 .051"	2 .177"
3 .198"	-7 .066"	3 .163"
4 .213"	-6 .080"	4 .149"
5 .228"	-5 .093"	5 .135"
6 .241"	-4 .107"	6 .120"
7 .256"	-3 .120"	7 .107"
8 .269"	-2 .135"	8 .093"
9 .283"	-1 .149"	9 .080"
0 .297"	0 .163"	0 .066"
	+1 .177"	
	+2 .192"	
	+3 .205"	For non-control chambers use .247"
	+4 .218"	
	+5 .232"	
	+6 .247"	
	+7 .261"	
	+8 .275"	
	+9 .289"	

Master Pins
2 .028"
3 .042"
4 .056"
5 .070"
6 .084"
7 .098"
8 .112"
9 .126"

Standard Tumbler Spring	603F20-7
IC Tumbler Spring	172F21-7
Standard Top Pin	.171"
Spool Top Pin	.171"
Top Pin, PL5000 Padlock	.320"
Top Pin to Block Master Ring	.320"
5-Pin Spring Cover, brass	217F42-2
6-Pin Spring Cover, brass	217F44-2
7-Pin Spring Cover, brass	217F43-2
6-Pin spring Cover, stainless	314F88-7
7-Pin spring Cover, stainless	585F39-7

.552" Diameter Plug

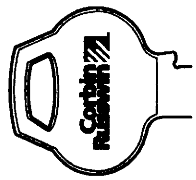
Bottom Pins	Build-Up Pins
1 .213"	-8 .030"
2 .228"	-7 .045"
3 .241"	-6 .058"
4 .256"	-5 .072"
5 .269"	-4 .087"
6 .283"	-3 .100"
7 .297"	-2 .114"
8 .311"	-1 .128"
9 .326"	0 .142"
0 .340"	+1 .156"
	+2 .171"
	+3 .184"
	+4 .198"
	+5 .212"
	+6 .226"
	+7 .241"
	+8 .253"
	+9 .268"

Russwin N Class - System 70

Applies only to these keyways: N1 thru N28
(formerly 1N thru 28N and 1K thru 28K)

Code Card
CX7 rev. A
for HPC 1200CM
Code Machine

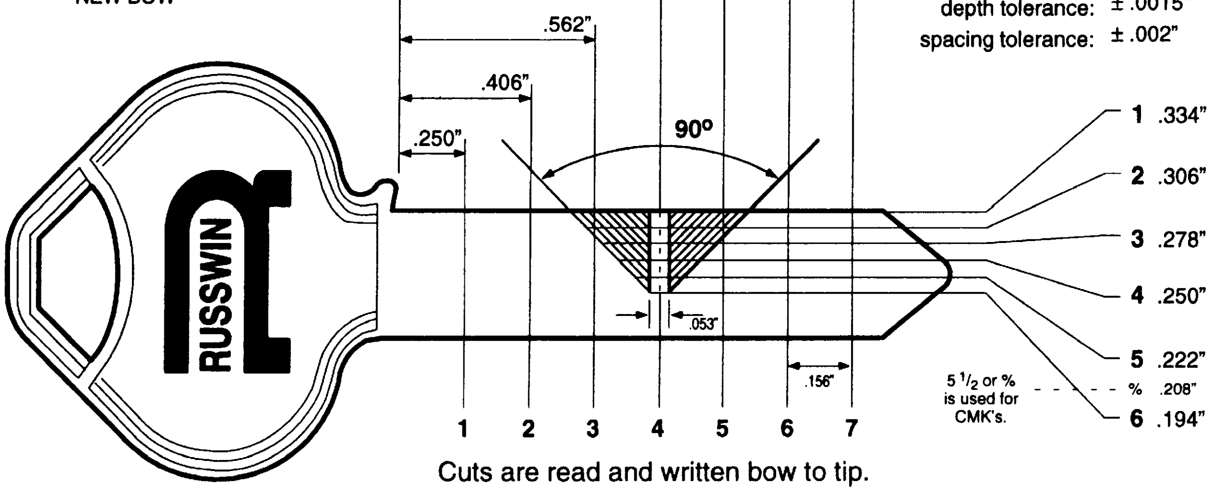
HIGH SECURITY
NOT AVAILABLE



NEW BOW

MACS: 4

increment: .028"
progression: single step
blade width: .343"
depth tolerance: ± .0015"
spacing tolerance: ± .002"



Cuts are read and written bow to tip.

Pin Lengths (1993 Consolidation)

.509" Diameter Plug

Bottom Pins		Build-Up Pins		IC Top Pins	
1	.165"	-4	.051"	1	.192"
2	.193"	-3	.080"	2	.163"
3	.220"	-2	.107"	3	.135"
4	.248"	-1	.135"	4	.107"
5	.276"	0	.163"	5	.080"
6	.305"	+1	.192"	6	.080"
		+2	.218"		
		+3	.247"	For non-control chambers use .247"	
		+4	.275"		
		+5	.303"		

Master Pins	
1	.028"
2	.056"
3	.084"
4	.112"
5	.140"

.552" Diameter Plug

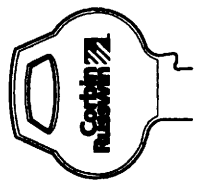
Bottom Pins		Build-Up Pins	
1	.208"	-4	.030"
2	.236"	-3	.058"
3	.263"	-2	.087"
4	.291"	-1	.114"
5	.320"	0	.142"
6	.349"	+1	.171"
		+2	.198"
		+3	.226"
		+4	.253"
		+5	.282"

Standard Tumbler Spring	603F20-7
IC Tumbler Spring	172F21-7
Standard Top Pin	.171"
Spool Top Pin	.171"
Top Pin, PL5000 Padlock	.320"
Top Pin to Block Master Ring	.320"
5-Pin Spring Cover, brass	217F42-2
6-Pin Spring Cover, brass	217F44-2
7-Pin Spring Cover, brass	217F43-2
6-Pin spring Cover, stainless	314F88-7
7-Pin spring Cover, stainless	585F39-7

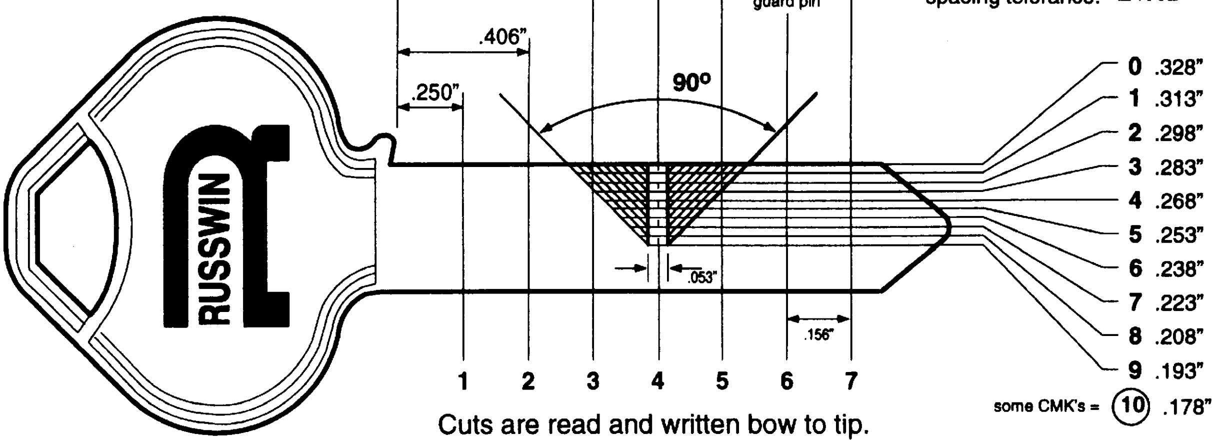
Russwin N Class - Pre-System 70

Applies only to these keyways: N1 thru N28
(formerly 1N thru 28N and 1K thru 28K)

Code Card
(C)41
for HPC 1200CM Code Machine



NEW BOW



HIGH SECURITY — NOT AVAILABLE

MACS: 7

increment: .015"
progression: two step
blade width: .343"
depth tolerance: ± .0015"
spacing tolerance: ± .002"

Cuts are read and written bow to tip.

Pin Lengths (1993 Consolidation)

.509" Diameter Plug

Bottom Pins		Build-Up Pins		IC Top Pins	
0	.171"	-9	.028"	0	.192"
1	.186"	-8	.042"	1	.177"
2	.201"	-7	.058"	2	.163"
3	.217"	-6	.072"	3	.149"
4	.231"	-5	.087"	4	.133"
5	.245"	-4	.103"	5	.118"
6	.260"	-3	.118"	6	.103"
7	.276"	-2	.133"	7	.087"
8	.291"	-1	.149"	8	.072"
9	.307"	0	.163"	9	.058"
		+1	.177"		
		+2	.192"		
		+3	.208"	For non-control chambers use .247"	
		+4	.222"		
		+5	.238"		
		+6	.253"		
		+7	.268"		
		+8	.282"		
		+9	.298"		

Master Pins	
2	.030"
3	.045"
4	.060"
5	.075"
6	.090"
7	.105"
8	.120"
9	.135"

Standard Tumbler Spring	603F20-7
IC Tumbler Spring	172F21-7
Standard Top Pin	.171"
Spool Top Pin	.171"
Top Pin, PL5000 Padlock	.320"
Top Pin to Block Master Ring	.320"
5-Pin Spring Cover, brass	217F42-2
6-Pin Spring Cover, brass	217F44-2
7-Pin Spring Cover, brass	217F43-2
6-Pin spring Cover, stainless	314F88-7
7-Pin spring Cover, stainless	585F39-7

.552" Diameter Plug

Bottom Pins		Build-Up Pins	
0	.213"	-7	.037"
1	.228"	-6	.051"
2	.245"	-5	.066"
3	.260"	-4	.082"
4	.273"	-3	.098"
5	.288"	-2	.112"
6	.305"	-1	.126"
7	.320"	0	.142"
8	.334"	+1	.156"
9	.349"	+2	.171"
		+3	.187"
		+4	.202"
		+5	.218"
		+6	.232"
		+7	.247"
		+8	.261"
		+9	.277"

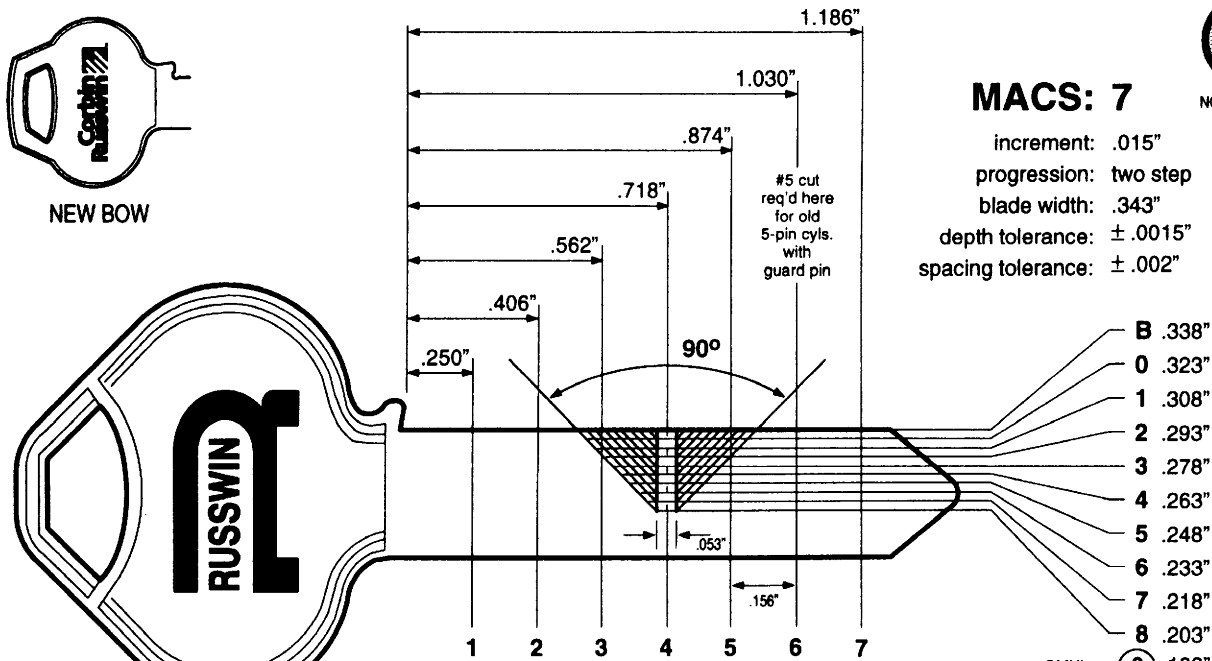
Russwin 981 Class

Applies to these keyways:							
5-Pin:	981	(R prefix)	982	(S prefix)	983	(T prefix)	Code Card **C981** for HPC 1200CM Code Machine
6-Pin:	was 961	(V prefix)	was 962	(W prefix)	was 963	(X prefix)	
7-Pin:		(L prefix)		(1L prefix)		(2L prefix)	



MACS: 7

increment: .015"
progression: two step
blade width: .343"
depth tolerance: ± .0015"
spacing tolerance: ± .002"



Cuts are read and written bow to tip.

Pin Lengths (1993 Consolidation)

.509" Diameter Plug

Bottom Pins	Build-Up Pins	IC Top Pins
B .160"	-9 .028"	B .192"
0 .175"	-8 .042"	0 .177"
1 .189"	-7 .058"	1 .163"
2 .203"	-6 .072"	2 .149"
3 .220"	-5 .087"	3 .133"
4 .234"	-4 .103"	4 .118"
5 .248"	-3 .118"	5 .103"
6 .263"	-2 .133"	6 .087"
7 .279"	-1 .149"	7 .072"
8 .294"	0 .163"	8 .058"
	+1 .177"	
	+2 .192"	For non-control chambers use .247"
	+3 .208"	
	+4 .222"	
	+5 .238"	
	+6 .253"	
	+7 .268"	
	+8 .282"	
	+9 .298"	

Master Pins
2 .030"
3 .045"
4 .060"
5 .075"
6 .090"
7 .105"
8 .120"
9 .135"

Standard Tumbler Spring	603F20-7
IC Tumbler Spring	172F21-7
Standard Top Pin	.171"
Spool Top Pin	.171"
Top Pin, PL5000 Padlock	.320"
Top Pin to Block Master Ring	.320"
5-Pin Spring Cover, brass	217F42-2
6-Pin Spring Cover, brass	217F44-2
7-Pin Spring Cover, brass	217F43-2
6-Pin spring Cover, stainless	314F88-7
7-Pin spring Cover, stainless	585F39-7

.552" Diameter Plug

Bottom Pins	Build-Up Pins
B .203"	-7 .037"
0 .217"	-6 .051"
1 .231"	-5 .066"
2 .248"	-4 .082"
3 .263"	-3 .098"
4 .276"	-2 .112"
5 .291"	-1 .126"
6 .307"	0 .142"
7 .322"	+1 .156"
8 .337"	+2 .171"
	+3 .187"
	+4 .202"
	+5 .218"
	+6 .232"
	+7 .247"
	+8 .261"
	+9 .277"

Old Russwin 852 Class

Applies only to these keyways:		
	852	(8 prefix)
	252	(2 prefix)
	G	(G prefix)

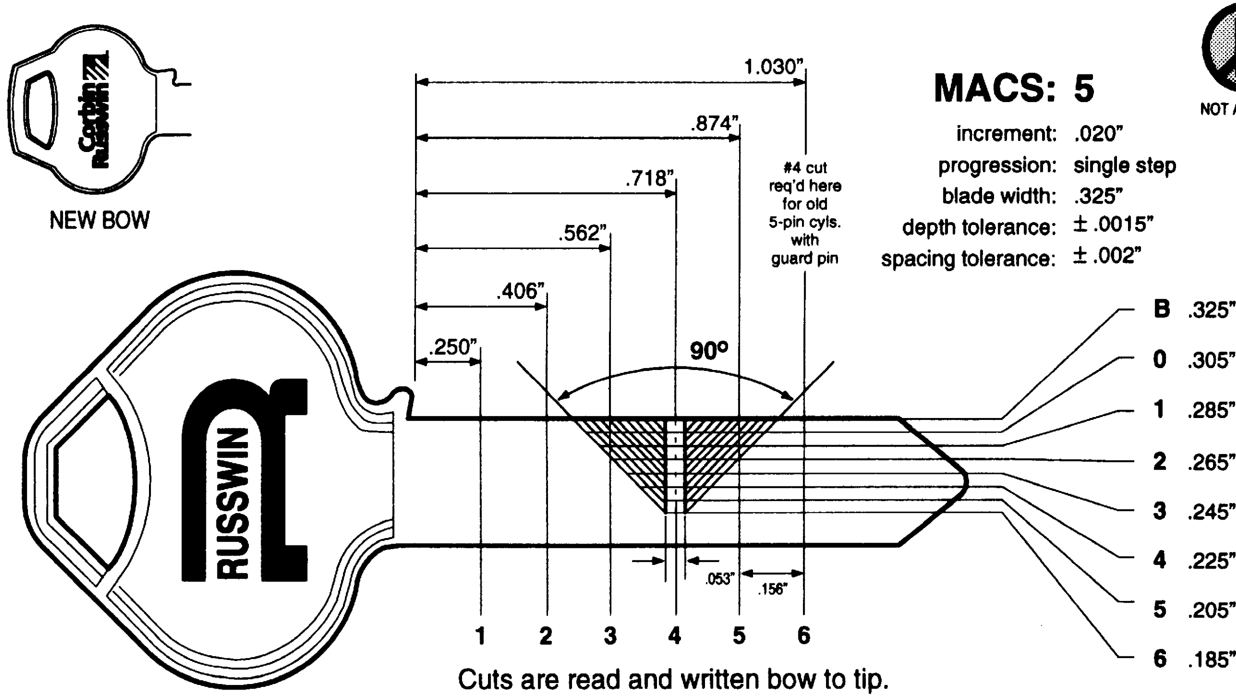
Code Card
C852
for HPC 1200CM Code Machine

HIGH SECURITY
NOT AVAILABLE

NEW BOW

MACS: 5

increment: .020"
progression: single step
blade width: .325"
depth tolerance: ± .0015"
spacing tolerance: ± .002"



Cuts are read and written bow to tip.

Pin Lengths (1993 Consolidation)

.509" Diameter Plug		
Bottom Pins	**Build-Up Pins**	**IC Top Pins**
B .171"	-6 .042"	B .202"
0 .193"	-5 .063"	0 .184"
1 .213"	-4 .082"	1 .163"
2 .231"	-3 .103"	2 .142"
3 .251"	-2 .122"	3 .122"
4 .273"	-1 .142"	4 .103"
5 .291"	0 .163"	5 .082"
6 .311"	+1 .184"	6 .063"
	+2 .202"	For non-control chambers use .247"
	+3 .222"	
	+4 .241"	
	+5 .261"	
	+6 .282"	

Master Pins
2 .040"
3 .060"
4 .080"
5 .100"
6 .120"
7 .140"

.552" Diameter Plug	
Bottom Pins	**Build-Up Pins**
B .217"	-5 .042"
0 .234"	-4 .063"
1 .256"	-3 .082"
2 .276"	-2 .103"
3 .294"	-1 .122"
4 .316"	0 .142"
5 .334"	+1 .163"
6 .354"	+2 .184"
	+3 .202"
	+4 .222"
	+5 .241"
	+6 .261"

Standard Tumbler Spring	603F20-7
IC Tumbler Spring	172F21-7
Standard Top Pin	.171"
Spool Top Pin	.171"
Top Pin, PL5000 Padlock	.320"
Top Pin to Block Master Ring	.320"
5-Pin Spring Cover, brass	217F42-2
6-Pin Spring Cover, brass	217F44-2
7-Pin Spring Cover, brass	217F43-2
6-Pin spring Cover, stainless	314F88-7
7-Pin spring Cover, stainless	585F39-7

Old Russwin A Class

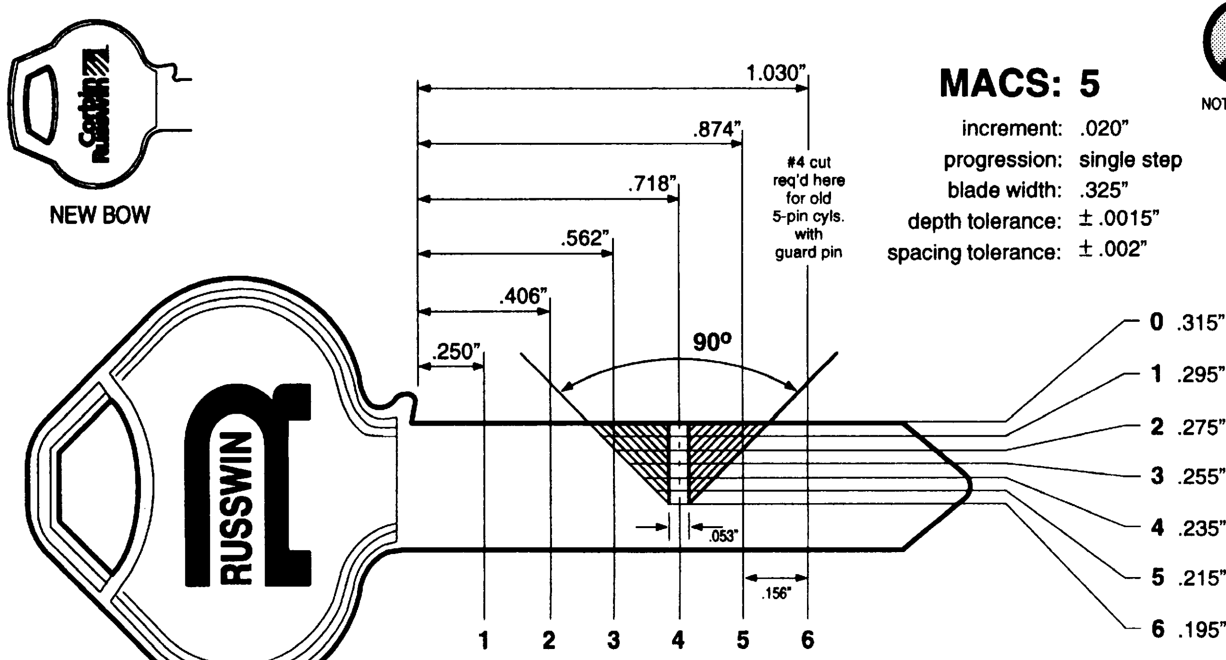
Applies only to these keyways: A1 thru A24
(formerly 1A thru 24A and 1Z thru 24Z)

Alter Depth Marks on Code Card
X12
for HPC Code Machine

HIGH SECURITY
NOT AVAILABLE

MACS: 5

increment: .020"
progression: single step
blade width: .325"
depth tolerance: ± .0015"
spacing tolerance: ± .002"



Cuts are read and written bow to tip.

Pin Lengths (1993 Consolidation)

.509" Diameter Plug

Bottom Pins	Build-Up Pins	IC Top Pins
0 .177"	**-6** .042"	**0** .184"
1 .198"	**-5** .063"	**1** .163"
2 .217"	**-4** .082"	**2** .142"
3 .236"	**-3** .103"	**3** .122"
4 .256"	**-2** .122"	**4** .103"
5 .276"	**-1** .142"	**5** .082"
6 .297"	**0** .163"	**6** .063"
	+1 .184"	For non-control chambers use .247"
	+2 .202"	
	+3 .222"	
	+4 .241"	
	+5 .261"	
	+6 .282"	

Master Pins
2 .040"
3 .060"
4 .080"
5 .100"
6 .120"

.552" Diameter Plug

Bottom Pins	Build-Up Pins
0 .220"	**-5** .042"
1 .241"	**-4** .063"
2 .260"	**-3** .082"
3 .279"	**-2** .103"
4 .301"	**-1** .122"
5 .320"	**0** .142"
6 .340"	**+1** .163"
	+2 .184"
	+3 .202"
	+4 .222"
	+5 .241"
	+6 .261"

Standard Tumbler Spring	603F20-7
IC Tumbler Spring	172F21-7
Standard Top Pin	.171"
Spool Top Pin	.171"
Top Pin, PL5000 Padlock	.320"
Top Pin to Block Master Ring	.320"
5-Pin Spring Cover, brass	217F42-2
6-Pin Spring Cover, brass	217F44-2
7-Pin Spring Cover, brass	217F43-2
6-Pin spring Cover, stainless	314F88-7
7-Pin spring Cover, stainless	585F39-7

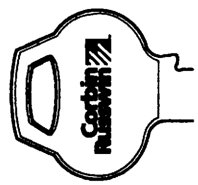
Old Russwin 752

Applies only to 752 keyway; 5-pin "7" prefix

For old 751 keyway (H prefix) rim cylinders, spacing is .245"/.156" and cuts are .001" deeper.

Code Card
X13
for HPC 1200CM Code Machine

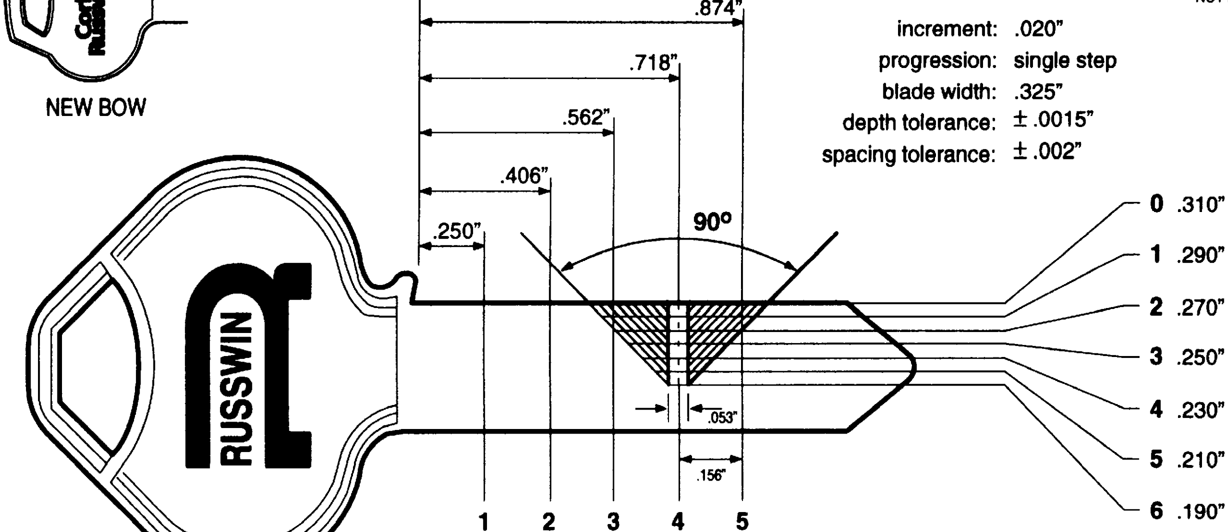
HIGH SECURITY
NOT AVAILABLE



NEW BOW

MACS: 5

increment: .020"
progression: single step
blade width: .325"
depth tolerance: ± .0015"
spacing tolerance: ± .002"



Cuts are read and written bow to tip.

Pin Lengths (1993 Consolidation)

.509" Diameter Plug

Bottom Pins		Build-Up Pins		IC Top Pins	
0	.186"	-6	.042"	0	.184"
1	.208"	-5	.063"	1	.163"
2	.228"	-4	.082"	2	.142"
3	.248"	-3	.103"	3	.122"
4	.267"	-2	.122"	4	.103"
5	.288"	-1	.142"	5	.082"
6	.307"	0	.163"	6	.063"
		+1	.184"	For non-control chambers use .247"	
		+2	.202"		
		+3	.222"		
		+4	.241"		
		+5	.261"		
		+6	.282"		

Master Pins	
2	.040"
3	.060"
4	.080"
5	.100"
6	.120"

.552" Diameter Plug

Bottom Pins		Build-Up Pins	
0	.231"	-5	.042"
1	.251"	-4	.063"
2	.269"	-3	.082"
3	.291"	-2	.103"
4	.311"	-1	.122"
5	.330"	0	.142"
6	.349"	+1	.163"
		+2	.184"
		+3	.202"
		+4	.222"
		+5	.241"
		+6	.261"

Standard Tumbler Spring	603F20-7
IC Tumbler Spring	172F21-7
Standard Top Pin	.171"
Spool Top Pin	.171"
Top Pin, PL5000 Padlock	.320"
Top Pin to Block Master Ring	.320"
5-Pin Spring Cover, brass	217F42-2
6-Pin Spring Cover, brass	217F44-2
7-Pin Spring Cover, brass	217F43-2
6-Pin spring Cover, stainless	314F88-7
7-Pin spring Cover, stainless	585F39-7

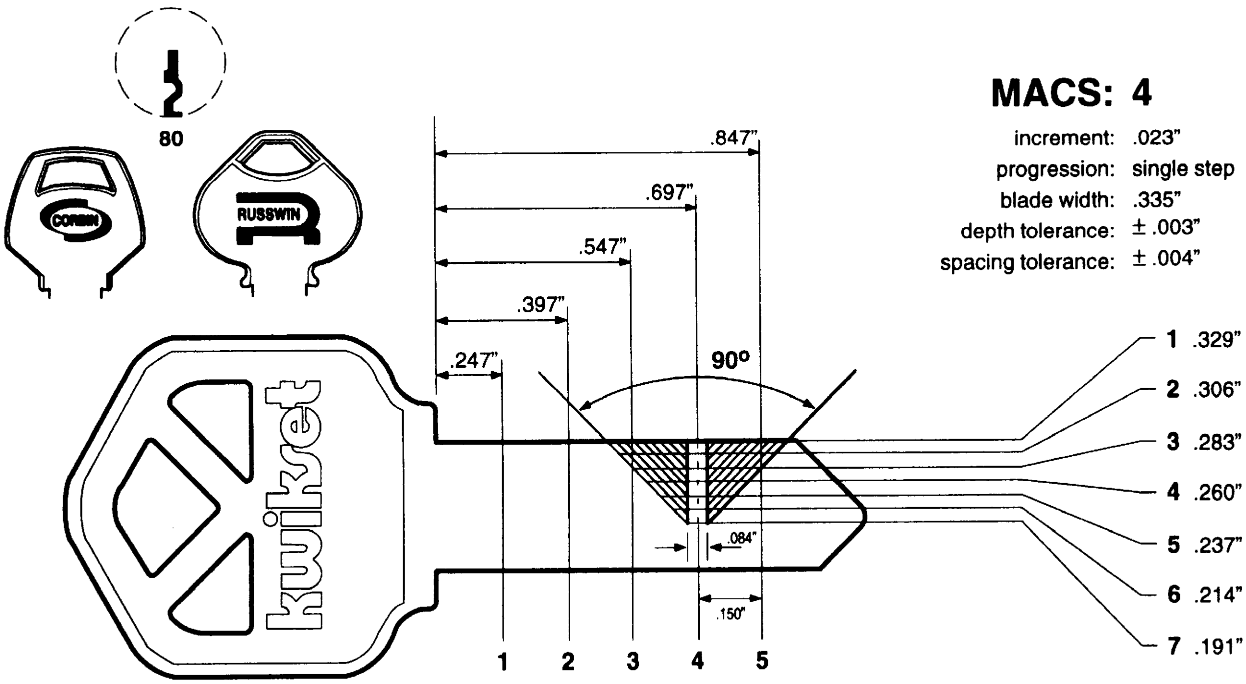
K Class

Applies only to these keyways: **Kwikset 1063**
Corbin 80 Discontinued. Use Ilco 1001GH
Russwin 751 Discontinued. Use Ilco 1011GH

Code Card **31** with Cutter CW1014

MACS: 4

increment: .023"
progression: single step
blade width: .335"
depth tolerance: ± .003"
spacing tolerance: ± .004"



Cuts are read and written bow to tip.

Contact your local Kwikset distributor for these items.

Bottom Pins

Size/Length		Part No.
1	.172"	01-03100
2	.195"	01-03101
3	.218"	01-03103
4	.241"	01-03105
5	.264"	01-03106
6	.287"	01-03107

Master Pins

Size/Length		Part No.
1	.023"	01-03108
2	.046"	01-03110
3	.069"	01-03112
4	.092"	01-03113
5	.115"	01-03114
6	.138"	01-03125

Top Pins

Length		Part No.
Reg.	.180"	01-01858
Const.	.160"	01-03117

Other Cylinder Parts and Service Equipment

Description	Part No.	Description	Part No.
Spring	01-01777	Follower	21-00152
Spring Cover	01-05757	Key Gauge	21-00049
Construction Balls	01-02208	Cylinder Removal Tool	01-01467
Plug Retainer	01-04345		

This key class was used in Corbin and Russwin residential locks between 1966 and 1992. Kwikset had an older depth system that used a .031" increment. That system was never used by Corbin Russwin, but in the interest of completeness, the depths are included here: 1 = .328", 3 = .297", 5 = .266", 7 = .235".

The specifications on this page are for Corbin and Russwin's first pin tumbler keyways.

The factory no longer supports these cylinders or keys, but they still are serviced in older cities throughout America.

As of the date of this publication, exhaustive research by the author has failed to locate engineering drawings to confirm the Corbin 98 Series specifications.

The spacing printed here is empirical data; measurements taken from old cylinders. The depths and pin lengths, however, are fairly certain.

Corbin 98 Series

(Discontinued)

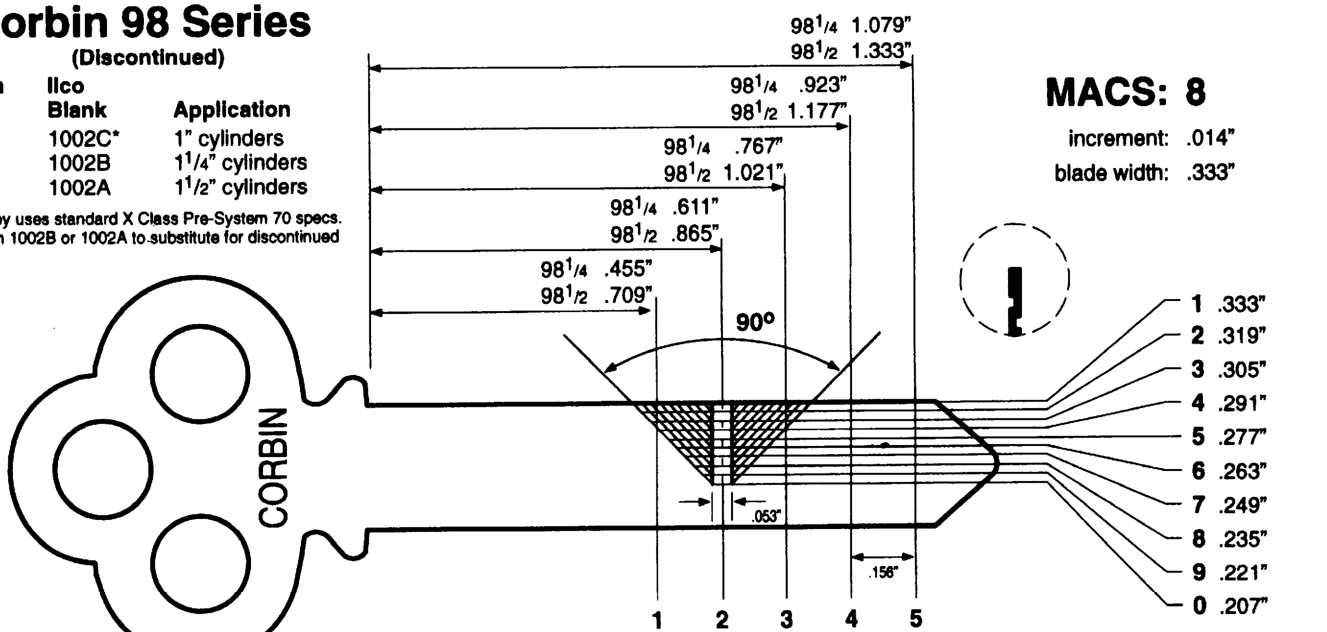
Corbin Blank	Ilco Blank	Application
98	1002C*	1" cylinders
98 1/4	1002B	1 1/4" cylinders
98 1/2	1002A	1 1/2" cylinders

*Short key uses standard X Class Pre-System 70 specs. Cut down 1002B or 1002A to substitute for discontinued 1002C.

MACS: 8

increment: .014"

blade width: .333"



Cuts are read and written **TIP to BOW.**

For pin lengths, see X Class Pre-System 70 .509" plug.

Russwin 750

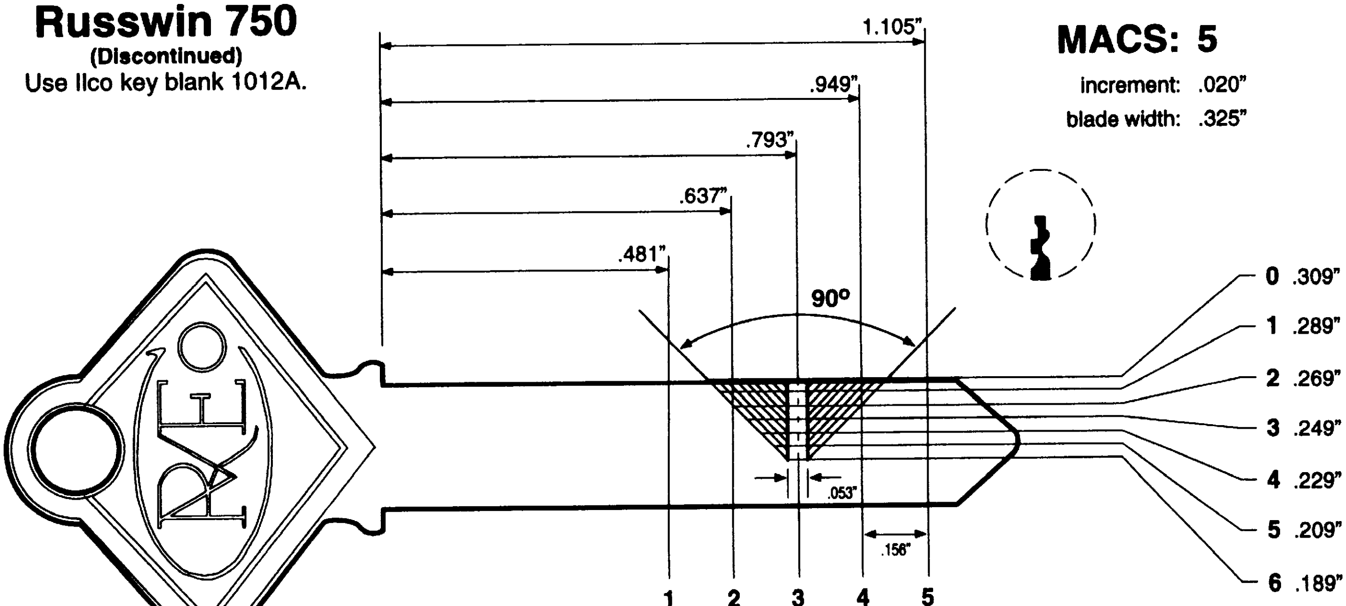
(Discontinued)

Use Ilco key blank 1012A.

MACS: 5

increment: .020"

blade width: .325"



Cuts are read and written bow to tip.

For pin lengths, see 752 Class .552" plug.

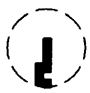
S Class Small Pin

Applies only to these keyways:

Keyway	Status
Corbin 26	Discontinued. Use Ilco X1001KC or X1000KC
Corbin 96	Discontinued. Use Ilco 1000K
Russwin 861UB	Discontinued. Use Ilco X1011KR

Code Card
X46 or X48
for HPC 1200CM Code Machine


Corbin 26

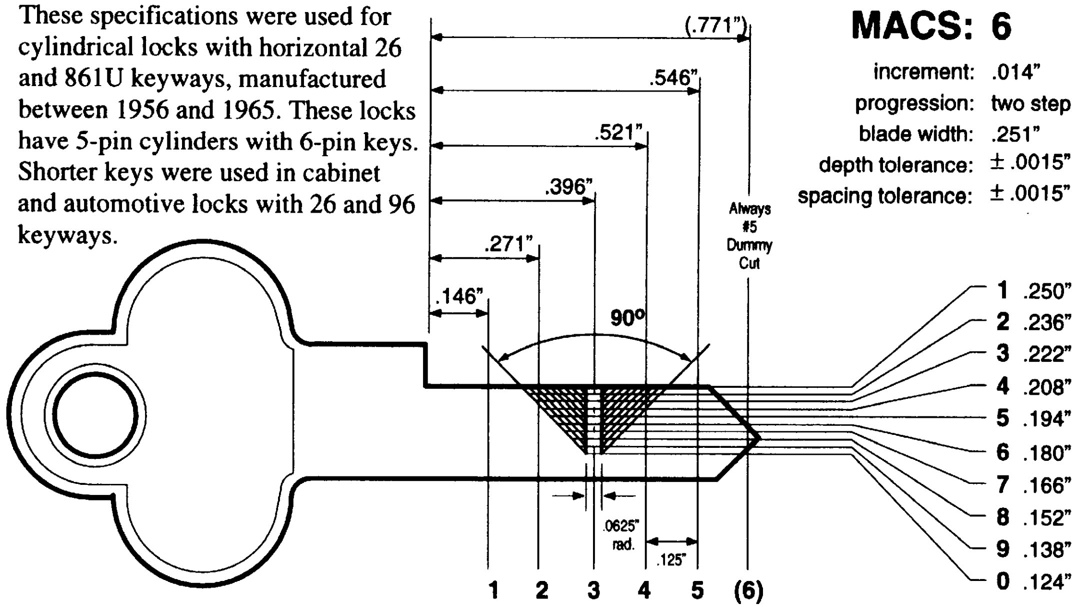

Corbin 96


Russwin 861U

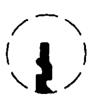
These specifications were used for cylindrical locks with horizontal 26 and 861U keyways, manufactured between 1956 and 1965. These locks have 5-pin cylinders with 6-pin keys. Shorter keys were used in cabinet and automotive locks with 26 and 96 keyways.

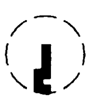
MACS: 6

increment:	.014"
progression:	two step
blade width:	.251"
depth tolerance:	±.0015"
spacing tolerance:	±.0015"



Cuts are read and written **TIP to BOW**.

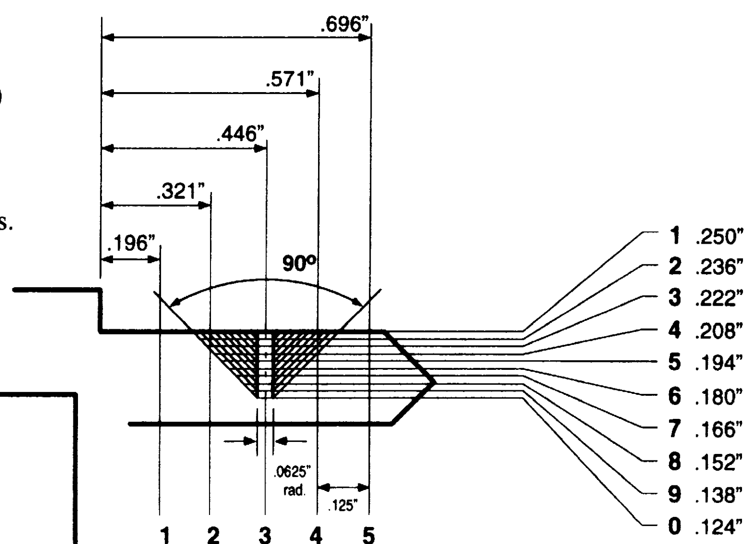

Corbin 26


Corbin 96

Other Spacing for Corbin 26 and 96
(Depths same as above)

This spacing applies to rim cylinders as well as various cabinet and automotive locks.

Note: Drawings for 96 keyway products call for spacing to begin at .197" on keys but .201" in cylinders!



Code Information (TIP to BOW!)

Prefix	Keyway	Spacing	Remarks
1D	96	.197"	direct; small rim cylinders
1N	26	.146"	direct and blind
7D	96	.146"	direct
8D	96	.197"	direct
9D	26	.196"	direct; small rim cylinders
CR	26	.146"	blind; 3 cuts on 4-pin blank
DB	26	.146"	blind for Diebold
E	96	.197"	blind 4-pin
F	96	.146"	blind for Franklin auto
GE	96	.146"	GE75 = 7364
HH	96	.146"	HH21 - HH31 blind
HH	26	.146"	HH41 - HH61 blind
K	96	.146"	K250 = 535x for Kardex files
MD	26	.146"	blind
MJ	26	.146"	blind
N	26	.146"	blind
P	96	?	P295 = 7421 for Postindex
SL	26	.196"	blind
WDA	26	.146"	blind WDA1 = 25367

Pin Information

.095" Diameter Pins and .397" Diameter Plug

Bottom Pins		Master Pins		Top Pins	
1	.144"	2	.028"	1	.198"
2	.158"	3	.042"	2	.184"
3	.172"	4	.056"	3	.170"
4	.186"	5	.070"	4	.156"
5	.200"	6	.084"	5	.142"
6	.214"	7	.098"	6	.128"
7	.228"	8	.112"	7	.114"
8	.242"	9	.126"	8	.100"
9	.256"			9	.086"
0	.270"			0	.072"

Old Russwin Small Pin

The factory no longer supports these cylinders or keys, but they still are serviced in the field.

The dimensions printed here are interpreted from early engineering drawings and actual measurements taken from old keys.

Because factory key depths were located from a register groove, root depths of sample keys may be up to .005" deeper than these specs. Cut the key to these depths and touch up by hand if needed.

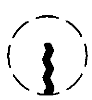
For Small Rim Cylinders

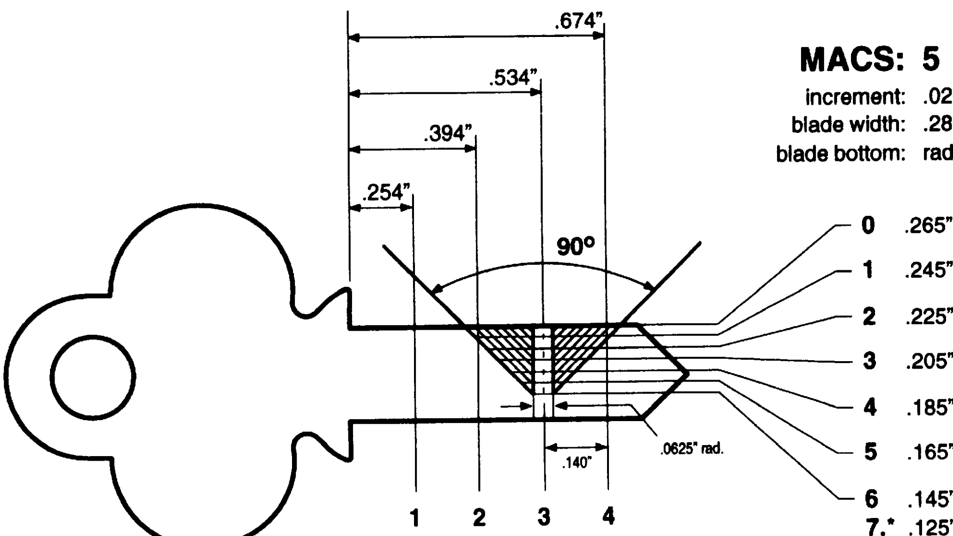
Applies only to these keyways:

861B (Not 861U)	9 Prefix	Discontinued. Use Ilco 1011B
761B	P or no prefix	Discontinued. Use Ilco 1012DM

Bitting stamped on tailpiece and original keys.


861


761



Cuts are read and written bow to tip.

MACS: 5
increment: .020"
blade width: .280"
blade bottom: radiused

*used only on 761 without prefix

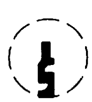
For 1920's Automotive Cylinders

Applies only to: Russwin 900B, Ilco 1011B X or 1011C, all discontinued

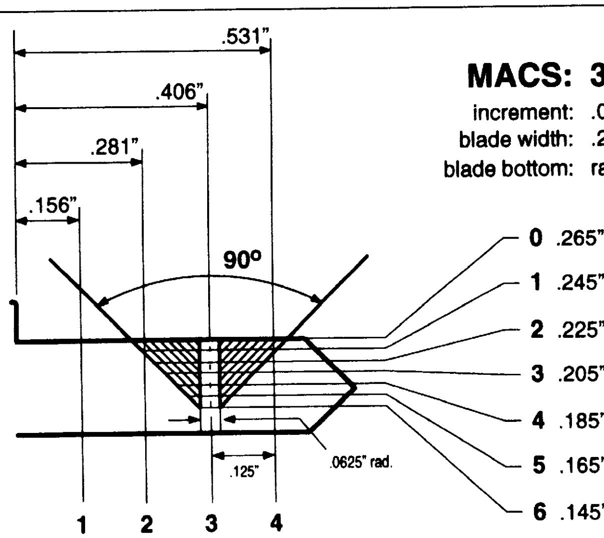
E1 – 250 blind codes for Hudson, Essex and Nash (see Reed General Code Book)

"5" prefix direct bitting for miscellaneous and retrofit locks

After Spacing Marks on Code Card
X50


900

Some other automotive cylinders use spacing of .156" / .140" on a longer blank.
No additional information is available at press time.



Cuts are read and written bow to tip.

MACS: 3
increment: .020"
blade width: .280"
blade bottom: radiused

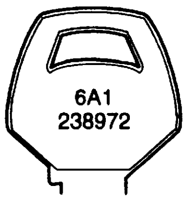
Pin Information

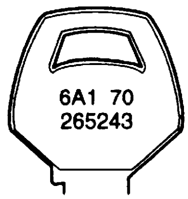
.095" Diameter Pins and .397" Diameter Plug

Bottom Pins		Master Pins		Top Pins	
0	.125"			0	.070"
1	.145"			1	.198"
2	.165"	2	.040"	2	.184"
3	.185"	3	.060"	3	.170"
4	.205"	4	.080"	4	.156"
5	.225"	5	.100"	5	.142"
6	.245	6	.120"	6	.126"

Corbin Listing by Prefix / Suffix

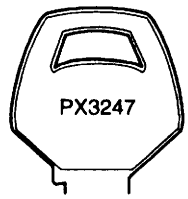
Corbin cut keys normally have some sort of number (other than a key symbol) which helps to identify their key section and how they may fit into a keying system.

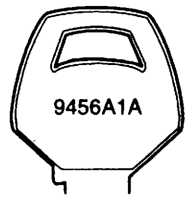




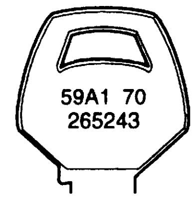
A key marked "6A1 238972" is identified as 59A1 key section, it is a change key in a system of at least 3 levels of keying, and it is Pre-System 70. System 70 keys had "70" between the prefix and the bitting, e.g. 6A1–70 265243.

Master level keys may have a prefix or suffix. In either case, the accompanying digits form a blind code, or register number, which has no relationship to the bitting.





Since mid-1992, only master level keys retain blind prefixes and suffixes. All other keys use the actual key section as a prefix.



This simplifies normal key identification, while preserving a degree of security for master keys. The current stamping of the older examples above would be 59A1 238972 and 59A1-70 265243, respectively.

Prefix	Section	Pins	Type	Remarks
0	97	5	stock	blind codes 0200,000 & up
0	97	5, 6, 7	GMK	prefix is 0, e.g. 0710
1D	96	5	CK	obsolete; first cut at .197"
1D1	Restricted	6	CK	
1DA	Restricted	6	MK	Not Under GMK
1H	27B1	7	CK	
1J	27B1	6	CK	
1K	27B1	5	CK	
1W	27B1	5, 6, 7	MK	Under GMK
2A	Contact CCL Security Products in New Britain, CT.			
2A1	Restricted	5, 6, 7	CK	Under GMK
2A2	Restricted	5, 6, 7	CK	Under GMK
2AA	Restricted	5, 6, 7	MK	Under GMK
2AB	Restricted	5, 6, 7	MK	Under GMK
2B1	Restricted	5, 6, 7	CK	Under GMK
2B2	Restricted	5, 6, 7	CK	Under GMK
2BA	Restricted	5, 6, 7	MK	Under GMK
2BB	Restricted	5, 6, 7	MK	Under GMK
2C	26	5	CK	Under GMK, obsolete
2C1	Restricted	5, 6, 7	CK	Under GMK
2C2	Restricted	5, 6, 7	CK	Under GMK
2CA	Restricted	5, 6, 7	MK	Under GMK
2CB	Restricted	5, 6, 7	MK	Under GMK
2D	BR	5	CK	
2D1	Restricted	5, 6, 7	CK	Under GMK
2D2	Restricted	5, 6, 7	CK	Under GMK
2DA	Restricted	5, 6, 7	MK	Under GMK
2DB	Restricted	5, 6, 7	MK	Under GMK
2E	67	5, 6	MK	Under GMK
2F	77A2	5, 6, 7	MK	Under GMK
2H	99	6	CK	
2J	99	6	CK	
2K	99	5	CK	
2L	67	5	CK	
2M	26	5	MK	Under GMK, obsolete
2MA	Restricted	5, 6, 7	MK	
2MB	Restricted	5, 6, 7	MK	
2MC	Restricted	5, 6, 7	MK	
2MD	Restricted	5, 6, 7	MK	
2N	77A2	5	CK	
2P	77A2	6	CK	
2S	67	6	CK	
2T	67	6 long	CK	6 1/2 pin hotel key
2U	L2	5, 6	MK	Under GMK
2V	77A2	7	CK	
2W	97	5, 6	MK or CK	Under GMK
2Z	70	5, 6, 7	MK	Under GMK
3A1	57A1	5, 6, 7	CK	

Prefix	Section	Pins	Type	Remarks
3A2	57A2	5, 6, 7	CK	
3AA	57A1	5, 6, 7	MK	
3AB	57A2	5, 6, 7	MK	
3B1	57B1	5, 6, 7	CK	
3B2	57B2	5, 6, 7	CK	
3BA	57B1	5, 6, 7	MK	
3BB	57B2	5, 6, 7	MK	
3C1	57C1	5, 6, 7	CK	
3C2	57C2	5, 6, 7	CK	
3CA	57C1	5, 6, 7	MK	
3CB	57C2	5, 6, 7	MK	
3D1	57D1	5, 6, 7	CK	
3D2	57D2	5, 6, 7	CK	
3DA	57D1	5, 6, 7	MK	
3DB	57D2	5, 6, 7	MK	
3E	68	5, 6	MK	Under GMK
3F	77B1	5, 6, 7	MK	Under GMK
3H	27	6 long	CK	6 1/2 pin hotel key
3J	27	6	CK	plain bow
3K	27	5	CK	
3L	68	5	CK	
3MA	57A	5, 6, 7	MK	formerly also for CK's
3MB	57B	5, 6, 7	MK	formerly also for CK's
3MC	57C	5, 6, 7	MK	formerly also for CK's
3MD	57D2	5, 6, 7	MK	
3N	77B1	5	CK	
3P	77B1	6	CK	
3PK	27	5	various	Obsolete CCL spacing.
3S	68	6	CK	
3T	68	6 long	CK	6 1/2 pin hotel key
3U	L2	5, 6	MK	
3V	77B1	7	CK	
3W	AR, BL, BR	5, 6	MK	Under GMK
3W	27	5, 6	CK or MK	Under GMK
3X	67	5	MK	stock
3Z	70	5, 6, 7	MK	Not Under GMK
4D	BL	5	CK	
4E	69	5, 6	MK	Under GMK
4F	77B2	5, 6, 7	MK	Under GMK
4H	28	6 long	CK	6 1/2 pin hotel key
4J	28	6	CK	
4K	28	5	CK	
4L	69	5	CK	
4N	77B2	5	CK	
4P	77B2	6	CK	
4R	Contact CCL Security Products in New Britain, CT.			
4S	69	6	CK	

Corbin Listing by Prefix / Suffix

Prefix	Section	Pins	Type	Remarks
4T	69	6 long	CK	6 1/2 pin hotel key
4T	Contact CCL Security Products in New Britain, CT.			
4V	77B2	7	CK	
4W	28	5, 6, 7	MK	Under GMK
4X	67, 67A1	5, 6	MK	large systems
5A	29			
5A1	Restricted	5, 6, 7	CK	Never under GMK
5A2	Restricted	5, 6, 7	CK	Never under GMK
5AA	Restricted	5, 6, 7	MK	Never under GMK
5AB	Restricted	5, 6, 7	MK	Never under GMK
5B1	Restricted	5, 6, 7	CK	Never under GMK
5B2	Restricted	5, 6, 7	CK	Never under GMK
5BA	Restricted	5, 6, 7	MK	Never under GMK
5BB	Restricted	5, 6, 7	MK	Never under GMK
5C	FR	5	CK	Under GMK, obsolete
5C1	Restricted	5, 6, 7	CK	Never under GMK
5C2	Restricted	5, 6, 7	CK	Never under GMK
5CA	Restricted	5, 6, 7	MK	Never under GMK
5CB	Restricted	5, 6, 7	MK	Never under GMK
5D1	Restricted	5, 6, 7	CK	Never under GMK
5D2	Restricted	5, 6, 7	CK	Never under GMK
5DA	Restricted	5, 6, 7	MK	Never under GMK
5DB	Restricted	5, 6, 7	MK	Never under GMK
5E	67A1	5, 6, 7	MK	Under GMK
5H	29	6, 7	CK	
5J	29	6	CK	
5K	29	5	CK	
5L	67A1	5	CK	
5M	FR	5	MK	obsolete
5S	67A1	6	CK	
5T	67A1	6 long	CK	6 1/2 pin hotel key
5W	29	5, 6, 7	MK	Under GMK
6A1	59A1	5, 6	CK	Under GMK
6A2	59A2	5, 6	CK	Under GMK
6AA	59A1	5, 6	MK	Under GMK
6AB	59A2	5, 6	MK	Under GMK
6B1	59B1	5, 6	CK	Under GMK
6B2	59B2	5, 6	CK	Under GMK
6BA	59B1	5, 6	MK	Under GMK
6BB	59B2	5, 6	MK	Under GMK
6C1	59C1	5, 6	CK	Under GMK
6C2	59C2	5, 6	CK	Under GMK
6CA	59C1	5, 6	MK	Under GMK
6CB	59C2	5, 6	MK	Under GMK
6D1	59D1	5, 6	CK	Under GMK
6D2	59D2	5, 6	CK	Under GMK
6DA	59D1	5, 6	MK	Under GMK
6DB	59D2	5, 6	MK	Under GMK
6E	77	5, 6	MK	Under GMK
6F	67A2	5, 6, 7	MK	Under GMK
6H	27A1	6 long	CK	6 1/2 pin hotel key
6J	27A1	6	CK	
6K	27A1	5	CK	
6L	60	5, 6	MK	Under GMK
6MA	59A	5, 6	MK	
6MB	59B	5, 6	MK	
6MC	59C	5, 6	MK	
6MD	59D	5, 6	MK	
6N	77	5	CK	
6P	77	6	CK	plain bow
6S	67A2	6	CK	
6T	67A2	7	CK	
6V	77	6 long	CK	6 1/2 pin hotel key
6W	27A1	5, 6, 7	MK	Under GMK
6X	77	5	MK	
7D	96	4, 5	OEM	first pin at .146"; obsolete
7D1	Restricted	6	CK	
7DA	Restricted	6	MK	Under GMK
7E	78	5, 6, 7	MK	Always Under GMK
7F	67B1	5, 6, 7	MK	Under GMK
7L	67B1	5	CK	
7N	78	5	CK	
7P	78	6	CK	
7S	67B1	6	CK	
7T	67B1	7	CK	
7V	78	7	CK	
7X	77	5, 6	MK	
8A1	59A1	5	CK	Never under GMK
8A2	59A2	5	CK	Never under GMK
8AA	59A1	5	MK	Never under GMK
8AB	59A2	5	MK	Never under GMK
8B1	59B1	5	CK	Never under GMK

Prefix	Section	Pins	Type	Remarks
8B2	59B2	5	CK	Never under GMK
8BA	59B1	5	MK	Never under GMK
8BB	59B2	5	MK	Never under GMK
8C1	59C1	5	CK	Never under GMK
8C2	59C2	5	CK	Never under GMK
8CA	59C1	5	MK	Never under GMK
8CB	59C2	5	MK	Never under GMK
8D	96	4, 5	Stock	First cut at .197"; obsolete
8D1	59D1	5	CK	Never under GMK
8D2	59D2	5	CK	Never under GMK
8DA	59D1	5	MK	Never under GMK
8DB	59D2	5	MK	Never under GMK
8E	79	5, 6, 7	MK	Under GMK
8F	67B2	5, 6, 7	MK	
8H	27A2	7	CK	
8J	27A2	6	CK	
8K	27A2	5	CK	
8L	67B2	5	CK	
8N	79	5	CK	
8P	79	6	CK	
8S	67B2	6	CK	
8T	67B2	7	CK	
8V	79	7	CK	
8W	27A2	5, 6, 7	MK	Under GMK
95M	96	5	MK	Under GMK, 96 & FR combo, obsolete
9A1	59A1	6	CK	Never under GMK
9A2	59A2	6	CK	Never under GMK
9AA	59A1	6	MK	Never under GMK
9AB	59A2	6	MK	Never under GMK
9B1	59B1	6	CK	Never under GMK
9B2	59B2	6	CK	Never under GMK
9BA	59B1	6	MK	Never under GMK
9BB	59B2	6	MK	Never under GMK
9C	96	5	CK	Under GMK, obsolete
9C1	59C1	6	CK	Never under GMK
9C2	59C2	6	CK	Never under GMK
9CA	59C1	6	MK	Never under GMK
9CB	59C2	6	MK	Never under GMK
9D	26	5	Stock	obsolete, first cut at .196"
9D1	59D1	6	CK	Never under GMK
9D2	59D2	6	CK	Never under GMK
9DA	59D1	6	MK	Never under GMK
9DB	59D2	6	MK	Never under GMK
9E	77A1	5, 6, 7	MK	Under GMK
9H	27B2	7	CK	
9J	27B2	6	CK	
9K	27B2	5	CK	
9L	67A2	5	CK	
9M	96	5	MK	Under GMK, obsolete
9MAB	59AB	5, 6, 7	MK	
9N	77A1	5	CK	
9P	77A1	6	CK	
9V	77A1	7	CK	
9W	27B2	5, 6, 7	MK	Under GMK
9X	26	5	MK	obsolete
95M	96–FR	5	MK	multi–section; obsolete
A	99	5, 6, 7	GMK	SUFFIX
A	57A	5, 6, 7	GMK	SUFFIX
A	Restricted	5, 6, 7	GMK	SUFFIX
A1	57A1	5, 6, 7	GMK	SUFFIX
A12A	59A	5, 6, 7	GMK	SUFFIX
A1A	59A1	5, 6, 7	GMK	SUFFIX
A2	57A2	5, 6, 7	GMK	SUFFIX
A2A	59A2	5, 6	GMK	SUFFIX
AB	57ABC	5, 6, 7	GGMK	OLD SUFFIX (10AB thru 1499AB)
AB	Restricted	5, 6, 7	GMK	SUFFIX
ABC	57ABC	5, 6, 7	GGMK	SUFFIX
AD	57AD	5, 6, 7	GGMK	SUFFIX
AR	AR	5, 6	CK	
AR	AR	5, 6, 7	GMK	SUFFIX
B	57B	5, 6, 7	GMK	SUFFIX
B	Restricted	5, 6, 7	GMK	SUFFIX
B1	57B1	5, 6, 7	GMK	SUFFIX
B12B	59B	5, 6	GMK	SUFFIX
B1B	59B1	5, 6	GMK	SUFFIX
B2	57B2	5, 6, 7	GMK	SUFFIX
B2B	59B2	5, 6	GMK	SUFFIX
B4R	Contact CCL Security Products in New Britain, CT.			
BA	59AB	5, 6	GGMK	SUFFIX
BD	59BD	5, 6	GGMK	SUFFIX
BL	BL	6	CK	

Corbin Listing by Prefix / Suffix

Prefix	Section	Pins	Type	Remarks
BL	BL	5, 6, 7	GMK	SUFFIX
BR	BR	6	CK	
BR	BR	5, 6, 7	GMK	SUFFIX
C	57C	5, 6, 7	GMK	SUFFIX
C1	57C1	5, 6, 7	GMK	SUFFIX
C12C	59C	5, 6	GMK	SUFFIX
C1C	59C1	5, 6	GMK	SUFFIX
C2	57C2	5, 6, 7	MK	SUFFIX
C2C	59C2	5, 6	GMK	SUFFIX
C2L	67	5	CK	special changes on CCL bow
C3X	67	5	MK	special MK on CCL bow
C9D	26	5	stock	obsolete, CCL bow
CC	26			obsolete
CD	59CD	5, 6	GMK	SUFFIX
CE	26			obsolete
CG	80	5	MK	under GMK, obsolete
CGM	80	5	GMK	obsolete
CK	80	5	CK	obsolete
CL	67	5	stock	CCL bow
CR	27	5	stock	blind codes CR200,000 & up
CX	80	5	CK	not under GMK, obsolete
D	57D	5, 6, 7	GMK	SUFFIX
D	98	4, 5	CK	under MK; obsolete blind
D1	57D1	5, 6, 7	GMK	SUFFIX
D12D	59D	5, 6	GMK	SUFFIX
D1D	59D1	5, 6	GMK	SUFFIX
D2	57D2	5, 6, 7	GMK	SUFFIX
D2	Restricted	5, 6	GMK	SUFFIX
D2D	59D2	5, 6	MK	SUFFIX
DC	57CD	5, 6, 7	GMK	SUFFIX
DD	59AD	5 or 6	GGMK	SUFFIX
DD1	Restricted	6	GMK	SUFFIX
E	96 (S–6786)	4	OEM	obs. blind codes, first cut .197"
EA	67	5	stock	blind codes EA200,000 & up
EE	77	5	stock	blind codes EE200,000 & up
G	67	5, 6, 7	GMK	SUFFIX
G12	067	5, 6, 7	GMK	SUFFIX
G2M	26	5	GMK	obsolete
G5M	FR	5	GMK	obsolete
G9M	96	5	GMK	obsolete
G95M	96-FR	5	GMK	multi–section, obsolete
GA	67A	5, 6, 7	GMK	SUFFIX
GA1	67A1	5, 6, 7	GMK	SUFFIX
GA2	67A2	5, 6, 7	GMK	SUFFIX
GAB	67AB	5, 6, 7	GGMK	SUFFIX
GB	67B	5, 6, 7	GMK	SUFFIX
GB1	67B1	5, 6, 7	GMK	SUFFIX
GB2	67B2	5, 6, 7	GMK	SUFFIX
GE75	96	4	OEM	obs. alike change, first cut .146"
GT	99	5	stock	blind codes
H	97	6 long	CK	6 1/2 pin hotel key
H	77	5, 6, 7	GMK	SUFFIX
H12	077	5, 6, 7	GMK	SUFFIX
HA	77A	5, 6, 7	GMK	SUFFIX
HA1	77A1	5, 6, 7	GMK	SUFFIX
HA2	77A2	5, 6, 7	GMK	SUFFIX
HAB	77AB	5, 6, 7	GGMK	SUFFIX
HB	77B	5, 6, 7	GMK	SUFFIX
HB1	77B1	5, 6, 7	GMK	SUFFIX
HB2	77B2	5, 6, 7	GMK	SUFFIX
HH	26			obs. blind codes, first cut .146"
IP	26			obsolete
J	97	6	CK	plain bow
K	97	5	CK	
K250	96	4	OEM	obs. alike change, first cut .146"
KK	AR	5	CK	
L	60	5, 6	GMK	SUFFIX
L	98 1/4, 98 1/2	5	MK	obsolete
LK	26			obsolete
M	60	5	CK	
M	98	4	MK	M10-6114 stock list; obsolete
MA	Restricted	5, 6, 7	GMK	SUFFIX
MA1	Restricted	5, 6, 7	GMK	SUFFIX
MA2	Restricted	5, 6, 7	GMK	SUFFIX
MAB	Restricted	5, 6, 7	GMK	SUFFIX
MAD	Restricted	5, 6, 7	GGMK	SUFFIX, 1500AD and up
MB	Restricted	5, 6, 7	GMK	SUFFIX
MB1	Restricted	5, 6, 7	GMK	SUFFIX
MB2	Restricted	5, 6, 7	GMK	SUFFIX
MC	Restricted	5, 6, 7	GMK	SUFFIX
MC1	Restricted	5, 6, 7	GMK	SUFFIX
MC2	Restricted	5, 6, 7	GMK	SUFFIX
MCD	Restricted	5, 6, 7	GGMK	SUFFIX
MD	Restricted	5, 6, 7	GMK	SUFFIX
MD1	Restricted	5, 6, 7	GMK	SUFFIX
MX	60	5	MK	
P	60	6	CK	
PX	60	5, 6	MK	
R	97, 99	4	OEM	Remington Register blind codes
SN	26			obsolete
T	26		CK	obsolete, first cut .146"
TH	26			obsolete
U	L2	5, 6	GMK	suffix
V	97	5	stock	
W	99	5	MK or CK	Under GMK; blind
W	27	5, 6, 7	GMK	SUFFIX
W0	97	5	MK or CK	Under GMK; blind
W12	027	5, 6, 7	GGMK	SUFFIX
WA1	27A1	5, 6, 7	GMK	SUFFIX
WA2	27A2	5, 6, 7	GMK	SUFFIX
WAB	27AB	5, 6, 7	GGMK	SUFFIX
WB1	27B1	5, 6, 7	GMK	SUFFIX
WB2	27B2	5, 6, 7	GMK	SUFFIX
X	99	4, 5	MK	stock list
X	27	5	MK	stock list 14000 & up
X0	97	4, 5	MK	stock list
XX	AR, BR, BL	5, 6	MK	2–level systems
XX	27, 27A1	5, 6	MK	3000 & up; large systems
XX	99	5	MK	large systems
XX0	97	5, 6	MK	large systems
Y	99	4	stock	blind codes on 5–pin blank
Y0	97	4	stock	blind codes on 5–pin blank
Z	99	5	stock	blind codes
Z	70	5 or 6	GMK	suffix

Corbin Listing by Key Section

This listing is a cross reference for the previous list. It is used to determine or verify a bitting prefix when you know the key section and how the key fits into its keying system. For reference, it also contains cross references from old key blank numbers to current designations.

23–1/4	obsolete designation for 27–6			
24	obsolete designation for 27–7		CK	6 1/2 pin hotel key
27	5	3K	CK	
27	5	CR	stock	blind codes CR200,000 & up
27	5	X	MK	stock list 14000 & up
27	5, 6	3W	CK or MK	Under GMK
27	5, 6	XX	MK	special 3000 & up
27	5, 6, 7	W	GMK	SUFFIX
27	6	3J	CK	plain bow
27	6 long	3H	CK	6 1/2 pin hotel key
027	5, 6, 7	W12	GGMK	SUFFIX
27A1	5	6K	CK	
27A1	5	XX	MK	
27A1	5, 6, 7	6W	MK	Under GMK
27A1	5, 6, 7	WA1	GMK	SUFFIX
27A1	6	6J	CK	
27A1	6 long	6H	CK	6 1/2 pin hotel key
27A2	5	8K	CK	
27A2	5, 6, 7	8W	MK	Under GMK
27A2	5, 6, 7	WA2	GMK	SUFFIX
27A2	6	8J	CK	
27A2	7	8H	CK	
27AB	5, 6, 7	WAB	GGMK	SUFFIX
27B1	5	1K	CK	
27B1	5, 6, 7	1W	MK	Under GMK
27B1	5, 6, 7	WB1	GMK	SUFFIX
27B1	6	1J	CK	
27B1	7	1H	CK	
27B2	5	9K	CK	
27B2	5, 6, 7	9W	MK	Under GMK
27B2	5, 6, 7	WB2	GMK	SUFFIX
27B2	6	9J	CK	
27B2	7	9H	CK	
28	5	4K	CK	
28	5, 6, 7	4W	MK	always Under GMK
28	6	4J	CK	
28	6 long	4H	CK	6 1/2 pin hotel key
29	5	5K	CK	
29	5, 6, 7	5W	MK	always Under GMK
29	6	5J	CK	
29	6 long	5H	CK	6 1/2 pin hotel key
29	?	5A		
57A	5, 6, 7	3MA	MK	formerly also for CK's
57A	5, 6, 7	A	GMK	SUFFIX
57A1	5, 6, 7	3A1	CK	
57A1	5, 6, 7	3AA	MK	
57A1	5, 6, 7	A1	GMK	SUFFIX
57A2	5, 6, 7	3A2	CK	
57A2	5, 6, 7	3AB	MK	
57A2	5, 6, 7	A2	GMK	SUFFIX
57ABC	5, 6, 7	AB	GGMK	OLD SUFFIX (10AB – 1499AB)
57ABC	5, 6, 7	ABC	GGMK	SUFFIX
57AD	5, 6, 7	AD	GGMK	SUFFIX
57B	5, 6, 7	3MB	MK	formerly also for CK's
57B	5, 6, 7	B	GMK	SUFFIX
57B1	5, 6, 7	3B1	CK	
57B1	5, 6, 7	3BA	MK	
57B1	5, 6, 7	B1	GMK	SUFFIX
57B2	5, 6, 7	3B2	CK	
57B2	5, 6, 7	3BB	MK	
57B2	5, 6, 7	B2	GMK	SUFFIX
57C	5, 6, 7	3MC	MK	formerly also for CK's
57C	5, 6, 7	C	GMK	SUFFIX
57C1	5, 6, 7	3C1	CK	
57C1	5, 6, 7	3CA	MK	
57C1	5, 6, 7	C1	GMK	SUFFIX
57C2	5, 6, 7	3C2	CK	
57C2	5, 6, 7	3CB	MK	
57C2	5, 6, 7	C2	MK	SUFFIX
57CD	5, 6, 7	DC	GMK	SUFFIX
57D	5, 6, 7	D	GMK	SUFFIX
57D1	5, 6, 7	3D1	CK	
57D1	5, 6, 7	3DA	MK	
57D1	5, 6, 7	D1	GMK	SUFFIX
57D2	5, 6, 7	3D2	CK	
57D2	5, 6, 7	3DB	MK	
57D2	5, 6, 7	3MD	MK	
57D2	5, 6, 7	D2	GMK	SUFFIX
59A	5, 6	6MA	MK	
59A	5, 6, 7	A12A	GMK	SUFFIX
59A1	5	8A1	CK	Never under GMK
59A1	5	8AA	MK	Never under GMK
59A1	5, 6	6A1	CK	Under GMK
59A1	5, 6	6AA	MK	Under GMK
59A1	5, 6, 7	A1A	GMK	SUFFIX
59A1	6	9A1	CK	Never under GMK
59A1	6	9AA	MK	Never under GMK
59A2	5	8A2	CK	Never under GMK
59A2	5	8AB	MK	Never under GMK
59A2	5, 6	6A2	CK	Under GMK
59A2	5, 6	6AB	MK	Under GMK
59A2	5, 6	A2A	GMK	SUFFIX
59A2	6	9A2	CK	Never under GMK
59A2	6	9AB	MK	Never under GMK
59AB	5, 6	BA	GGMK	SUFFIX
59AB	5, 6, 7	9MAB	MK	
59AD	5 or 6	DD	GGMK	SUFFIX
59B	5, 6	6MB	MK	
59B	5, 6	B12B	GMK	SUFFIX
59B1	5	8B1	CK	Never under GMK
59B1	5	8BA	MK	Never under GMK
59B1	5, 6	6B1	CK	Under GMK
59B1	5, 6	6BA	MK	Under GMK
59B1	5, 6	B1B	GMK	SUFFIX
59B1	6	9B1	CK	Never under GMK
59B1	6	9BA	MK	Never under GMK
59B2	5	8B2	CK	Never under GMK
59B2	5	8BB	MK	Never under GMK
59B2	5, 6	6B2	CK	Under GMK
59B2	5, 6	6BB	MK	Under GMK
59B2	5, 6	B2B	GMK	SUFFIX
59B2	6	9B2	CK	Never under GMK
59B2	6	9BB	MK	Never under GMK
59BD	5, 6	BD	GGMK	SUFFIX
59C	5, 6	6MC	MK	
59C	5, 6	C12C	GMK	SUFFIX
59C1	5	8C1	CK	Never under GMK
59C1	5	8CA	MK	Never under GMK
59C1	5, 6	6C1	CK	Under GMK
59C1	5, 6	6CA	MK	Under GMK
59C1	5, 6	C1C	GMK	SUFFIX
59C1	6	9C1	CK	Never under GMK
59C1	6	9CA	MK	Never under GMK
59C2	5	8C2	CK	Never under GMK
59C2	5	8CB	MK	Never under GMK
59C2	5, 6	6C2	CK	Under GMK
59C2	5, 6	6CB	MK	Under GMK
59C2	5, 6	C2C	GMK	SUFFIX
59C2	6	9C2	CK	Never under GMK
59C2	6	9CB	MK	Never under GMK
59CD	5, 6	CD	GMK	SUFFIX
59D	5, 6	6MD	MK	
59D	5, 6	D12D	GMK	SUFFIX
59D1	5	8D1	CK	Never under GMK
59D1	5	8DA	MK	Never under GMK
59D1	5, 6	6D1	CK	Under GMK
59D1	5, 6	6DA	MK	Under GMK
59D1	6	9D1	CK	Never under GMK
59D1	6	9DA	MK	Never under GMK
59D2	5	8D2	CK	Never under GMK
59D2	5	8DB	MK	Never under GMK
59D2	5, 6	6D2	CK	Under GMK
59D2	5, 6	6DB	MK	Under GMK
59D2	5, 6	D2D	MK	SUFFIX
59D2	6	9D2	CK	Never under GMK
59D2	6	9DB	MK	Never under GMK
59DA	5, 6	D1D	GMK	SUFFIX

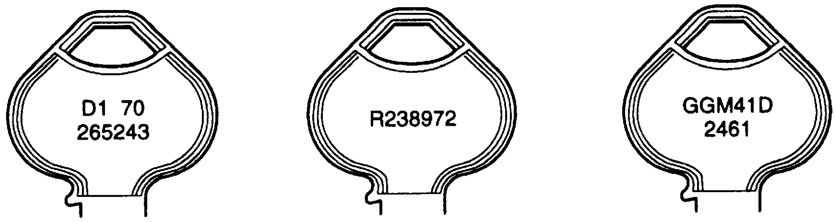
Corbin Listing by Key Section

60	5	M	CK	
60	5	MX	MK	
60	5, 6	6L	MK	Under GMK
60	5, 6	L	GMK	SUFFIX
60	5, 6	PX	MK	
60	6	P	CK	
$63^{1}/4$	obsolete designation for 67–6			
64	obsolete designation for 67–7			$6^{1}/2$ pin hotel key
67	5	2L	CK	
67	5	3X	MK	stock list
67	5	C2L	CK	special changes on CCL bow
67	5	C3X	MK	special MK on CCL bow
67	5	CL	stock	CCL bow
67	5	EA	stock	blind codes EA200,000 & up
67	5, 6	2E	MK	Under GMK
67	5, 6	4X	MK	
67	5, 6, 7	G	GMK	SUFFIX
67	6	2S	CK	
67	6 long	2T	CK	$6^{1}/2$ pin hotel key
067	5, 6, 7	G12	GMK	SUFFIX
67A	5, 6, 7	GA	GMK	SUFFIX
67A1	5	5L	CK	
67A1	5, 6	4X	MK	
67A1	5, 6, 7	5E	MK	Under GMK
67A1	5, 6, 7	GA1	GMK	SUFFIX
67A1	6	5S	CK	
67A1	6 long	5T	CK	$6^{1}/2$ pin hotel key
67A2	5	9L	CK	
67A2	5, 6, 7	6F	MK	Under GMK
67A2	5, 6, 7	GA2	GMK	SUFFIX
67A2	6	6S	CK	
67A2	6 long	6T	CK	$6^{1}/2$ pin hotel key
67AB	5, 6, 7	GAB	GGMK	SUFFIX
67B	5, 6, 7	GB	GMK	SUFFIX
67B1	5	7L	CK	
67B1	5, 6, 7	7F	MK	Under GMK
67B1	5, 6, 7	GB1	GMK	SUFFIX
67B1	6	7S	CK	
67B1	7	7T	CK	
67B2	5	8L	CK	
67B2	5, 6, 7	8F	MK	
67B2	5, 6, 7	GB2	GMK	SUFFIX
67B2	6	8S	CK	
67B2	7	8T	CK	
68	5	3L	CK	
68	5, 6	3E	MK	Under GMK
68	6	3S	CK	
68	6 long	3T	CK	$6^{1}/2$ pin hotel key
69	5	4L	CK	
69	5, 6	4E	MK	Under GMK
69	6 long	4T	CK	$6^{1}/2$ pin hotel key
69	6	4S	CK	
70	5 or 6	Z	GMK	suffix
70	5, 6, 7	2Z	MK	Under GMK
70	5, 6, 7	3Z	MK	NOT Under GMK
$73^{1}/4$	obsolete designation for 77–6			
74	obsolete designation for 77–7			$6^{1}/2$ pin hotel key
77	5	6N	CK	
77	5	6X	MK	
77	5	EE	stock	blind codes EE200,000 & up
77	5, 6	6E	MK	Under GMK
77	5, 6	7X	MK	
77	5, 6, 7	H	GMK	SUFFIX
77	6	6P	CK	plain bow
77	6 long	6V	CK	$6^{1}/2$ pin hotel key
077	5, 6, 7	H12	GMK	SUFFIX
77A	5, 6, 7	HA	GMK	SUFFIX
77A1	5	9N	CK	
77A1	5, 6, 7	9E	MK	Under GMK
77A1	5, 6, 7	HA1	GMK	SUFFIX
77A1	6	9P	CK	
77A1	7	9V	CK	
77A2	5	2N	CK	
77B2	5	4N	CK	
77B2	5, 6, 7	4F	MK	Under GMK
77B2	5, 6, 7	HB2	GMK	SUFFIX
77B2	6	4P	CK	
77B2	7	4V	CK	
78	5	7N	CK	
78	5, 6, 7	7E	MK	Under GMK
78	6	7P	CK	
78	7	7V	CK	
77A2	5, 6, 7	2F	MK	Under GMK
77A2	5, 6, 7	HA2	GMK	SUFFIX
77A2	6	2P	CK	
77A2	7	2V	CK	
77AB	5, 6, 7	HAB	GGMK	SUFFIX
77B	5, 6, 7	HB	GMK	SUFFIX
77B1	5	3N	CK	
77B1	5, 6, 7	3F	MK	Under GMK
77B1	5, 6, 7	HB1	GMK	SUFFIX
77B1	6	3P	CK	
77B1	7	3V	CK	
79	5	8N	CK	
79	5, 6, 7	8E	MK	Under GMK
79	6	8P	CK	
79	7	8V	CK	
$93^{1}/4$	obsolete designation for 97–6			
94	obsolete designation for 97–7			$6^{1}/2$ pin hotel key
97	5	0	CK	0200,000 and up
97	5	K	CK	
97	5	V	stock	
97	5	W0	MK or CK	Under GMK
97	4, 5	X0	MK	stock list
97	4, 5	Y0	stock	blind codes on 5–pin blank
97	5, 6	2W	MK or CK	Under GMK
97	5, 6, 7	0	GMK	prefix is 0, e.g. 0710
97	5, 6	XX0	MK	large systems
97	6	J	CK	plain bow
97	6 long	H	CK	$6^{1}/2$ pin hotel key
98	4	M	MK	M10–6114; obsolete
98	4, 5	D	CK	under MK; obsolete
$98^{1}/4$, $98^{1}/2$	5	L	MK	obsolete
99	4	Y	stock	blind codes on 5–pin blank
99	5	2K	CK	
99	5	GT	stock	blind codes
99	5	W	MK or CK	Under GMK
99	4, 5	X	MK	stock list
99	5	XX	MK	large systems
99	5	Z	stock	blind codes
99	5, 6, 7	A	GMK	SUFFIX
99	6	2H	CK	
99	6	2J	CK	
AR	5	KK	CK	
AR	5, 6	3W	MK	Under GMK
AR	5, 6	AR	CK	
AR	5, 6	XX	MK	2–level systems
AR	5, 6, 7	AR	GMK	SUFFIX
BL	5	4D	CK	
BL	5, 6	3W	MK	Under GMK
BL	5, 6	XX	MK	2–level systems
BL	5, 6, 7	BL	GMK	SUFFIX
BL	6	BL	CK	
BR	5	2D	CK	
BR	5, 6	3W	MK	Under GMK
BR	5, 6	XX	MK	2–level systems
BR	5, 6, 7	BR	GMK	SUFFIX
BR	6	BR	CK	
L2	5, 6	2U	MK	Under GMK
L2	5, 6	3U	MK	
L2	5, 6	U	GMK	suffix

S–8322	obsolete designation for 27A1
S–8322–$^{1}/2$	obsolete designation for 67A1
S–8322–$^{3}/4$	obsolete designation for 77A1
S–8323	obsolete designation for 027
S–8323–$^{1}/2$	obsolete designation for 067
S–8323–$^{3}/4$	obsolete designation for 077

Russwin Listing

Although Russwin had more keyways than Corbin, the prefix system is much simpler.



Prefix	Key	Pins	Remarks
none	761	4	small pin rim cylinder, corrugated key, depths 0-7
0	A10	4	Hart & Hutchinson lockers
1A to 24A	A1 to A24	5 or 7	5-pin keys require a #5 guard pin cut in 6th position for old cylinders.
1D to 4D	D1 - D4	5, 6 or 7	multi-sections follow same logic
1F	861U	6	small pin knob locks; first cut at .146"
1H to 8H	H1 to H8	5, 6 or 7	multi-sections follow same logic
1K to 28K	N1 to N28	5 or 7	
1L	982	7	
1N to 28N	N1 to N28	6	
1Z to 8Z	A1 to A24	6	
2	252	5 or 6	5-pin keys require a #4 guard pin cut in 6th position for old cylinders.
28	2852	5 or 6	5-pin keys require a #4 guard pin cut in 6th position for old cylinders.
2L	983	7	
4	A4	4	Hart & Hutchinson lockers
5	900	4	small pin automobile cylinder
6	905	4	small pin automobile cylinder
7	752	5	
7	A7	4	Hart & Hutchinson lockers
8	852	5 or 6	5-pin keys require a #4 guard pin cut in 6th position for old cylinders.
9	861	4	small pin rim cylinder
D	D1	5, 6 or 7	Pre-System 70
E	900	4	E1 - 250 blind codes for small pin Nash and Essex auto cylinder
F	762	4	small pin rim cylinder, flat key
G	G	5	
GGM + other prefix = great grand master key			register number
GM + other prefix = grand master key			register number
H	751 old	5	diamond bow 752
H	A4 radius bottom	5	Hart & Hutchinson lockers
J	750	5	long blade 752
L	981	7	
L1L	9812	7	
M + other prefix = master key			register number
P	761	4	small pin rim cylinder, corrugated key, depths 0-6
R	981	5	#5 guard pin cut in 6th position required for old cylinders
RG	751 modern	5	Kwikset MK in 3-level system
RGM	751 modern	5	Kwikset GMK
RK	751 modern	5	Kwikset CK
RS	9812	5	
RX	751 modern	5	Kwikset MK, 2-level system
S	982	5	#5 guard pin cut in 6th position required for old cylinders
SS	900	4	SS1 - 500 blind codes for small pin automobile cylinder
T	983	5	#5 guard pin cut in 6th position required for old cylinders
V	981	6	
VW	9812	6	
W	982	6	
X	983	6	

Appendix C — Key Blank Cross Reference

There are several manufacturers of after-market key blanks. Each has its own numbering system. While these key blanks generally operate properly in Corbin Russwin cylinders, they are not manufactured to Corbin Russwin's specifications and some may not operate properly.

In order to help identify non-original key blanks, the major manufacturers' numbers are listed and followed by the original Corbin Russwin equivalent. The Corbin Russwin number only includes the bow shape when the non-original blank has a special bow. Discontinued blanks are marked with asterisks.

Cole / Curtis / ESP / Ilco-EZ

Curtis / ESP / Ilco-EZ	Corbin Russwin	Curtis / ESP / Ilco-EZ	Corbin Russwin	Curtis / ESP / Ilco-EZ	Corbin Russwin	Curtis / ESP / Ilco-EZ	Corbin Russwin
CO1	99-5	CO61-1/2	57A2-5	CO101		RU31	N1-6
CO2	99-6	CO62	77-6	CO61	57A2-7	RU32	N2-6
CO3	27-5	CO64	57B1-7	CO102	59C2-6	RU33	N3-6
CO4	27-6	CO65	69-5	CO107	59CD-6	RU34	N4-6
CO5	97-5	CO65 (Cole)	60-5	CO108	59D2-6	RU35	N5-6
CO6	97-6	CO66	69-7	CO110	57D2-6	RU36	N6-6
CO7	67-5	CO66 (Cole)	60-6	RU1	852-5	RU37	N7-6
CO8	96-5*	CO69	67A1-6	RU2	752-5	RU38	N8-6
CO9	26-6*	CO69-1/2	67A1-5	RU3	861B*	RU39	N9-6
CO13	99-7	CO71	57B2-7	RU4	981-5	RU40	N10-6
CO28	97-7	CO75	26-6*	RU5	252-5	RU41	N11-6
CO30	AR-5	CO83-1/2	77A1-6	RU7	A1x12M-5	RU42	N12-6
CO33	27-7	CO87	60-5	RU9	750B*	RU43	N13-6
CO34	57B2-6	CO88	60-6	RU11	761B*	RU44	751*
CO35	57A1-6	CO89	59AB-6	RU13	982-5	RU45	D1-5
CO35-1/2	57A1-5	CO91	59A1-6	RU13-1/2	982-6	RU46	D1-6
CO36	67-6	CO92	59A2-6	RU16	981-6	RU47	
CO37	67-7	CO93	59A-6	RU17	861UB*	RU49	D3-6
CO38	BR-7	CO94	59B1-6	RU18	N1x13M-5	RU51	D4-6
CO39	BR-5	CO95	59B2-6	RU18-1/2	N1x13M-6	RU52	D12-6
CO44	57B1-6	CO96	59B-6	RU20 (Cole)	D1-5	SK1	77-5
CO45	57A2-6	CO97	80-5*	RU21 (Cole)	D1-6	SK2	57AC-6
CO57	67B2-6	CO98	59C1-6	RU22 (Cole)	751*	SK4	77-7
CO60	57A1-7						

Dominion

Dominion	Corbin Russwin	Dominion	Corbin Russwin	Dominion	Corbin Russwin	Dominion	Corbin Russwin
00	99-5	01DM	59D-5	L01B1	59B1-7	U01B1	59B1-6
00A	99-7	01E	27-6	L01B2	59B2-7	U01B2	59B2-6
00AB	99-6	01EA	27-7	L01BM	59B-7	U01BM	59B-6
00K	96-5*	01EB	27-5	L01C1	59C1-7	U01C1	59C1-6
00KC	26-6*	01EG	67-6	L01C2	59C2-7	U01C2	59C2-6
00Z	60-5	01EL	67-7	L01CM	59C-7	U01CM	59C-6
L00Z	60-7	01EN	67-5	L01D1	59D1-7	U01D1	59D1-6
U00Z	60-6	01GH	80-5*	L01D2	59D2-7	U01D2	59D2-6
X00KC	26-6*	01GM	59AB-5	L01DM	59D-7	U01DM	59D-6
X00KR	861UB*	01GRM	59AD-5	L01GM	59AB-7	U01E	L2-6
01	97-5	01MA	57B1-6	L01GRM	59AD-7	U01GM	59AB-6
01A	97-7	01MB	57A2-6	L01RM	59CD-7	U01GRM	59AD-6
01A1	59A1-5	01MC	57D1-6	R01ED	57B2-6	U01RM	59CD-6
01A2	59A2-5	01MD	57D2-6	R01EE	57A1-6	11	852-5
01AB	97-6	01MG	57B2-6	R01EF	57A1-5	11-04A	S-3095B*
01AM	59A-5	01MJ	67A1-5	R01EG	77-6	11-04AS	H. & H. 4-pin*
01B1	59B1-5	01RM	59CD-5	R01EL	77-7	11B	861B *
01B2	59B2-5	A01MA	57B1-7	R01EN	77-5	11D1	D1-5
01BM	59B-5	A01MB	57A2-7	R01ES	077-5	11D2	D2-5
01C1	59C1-5	A01MF	57A1-7	R01MJ	77A1-5	11D3	D3-5
01C2	59C2-5	A01MJ	67A1-6	RA01MJ	77A1-6	11D4	D4-5
01CM	59C-5	L01A1	59A1-7	U01A1	59A1-6	11GH	751*
01D1	59D1-5	L01A2	59A2-7	U01A2	59A2-6	11GJ	
01D2	59D2-5	L01AM	59A-7	U01AM	59A-6	11K1	N1-5

Dominion (Cont'd)

Dominion	Corbin Russwin
11K2	N2-5
11K3	N3-5
11K4	N4-5
11K5	N5-5
11K6	N6-5
11K7	N7-5
11K8	N8-5
11K9	N9-5
11K10	N10-5
11K11	N11-5
11K12	N12-5
11K13	N13-5
11KM	N1x13M-5
11M	A1x12M-5
11MA	A1x12M-6

Dominion	Corbin Russwin
11P	981-5
11P	981-5
11S	982-5
11S	982-5
11T	983-5
A11D1	D1-6
A11D2	D2-6
A11D3	D3-6
A11D4	D4-6
A11P	981-6
A11S	982-6
A11T	983-6
12	752-5
12A	750B*
CB 9	L2-6-90

Dominion	Corbin Russwin
CB10	70-6-90
CB11	L2-6-50
RUK1	N1-6
RUK2	N2-6
RUK3	N3-6
RUK4	N4-6
RUK5	N5-6
RUK6	N6-6
RUK7	N7-6
RUK8	N8-6
RUK9	N9-6
RUK10	N10-6
RUK11	N11-6
RUK12	N12-6
RUK13	N13-6

Dominion	Corbin Russwin
RUKM	N1x13M-6
RUN15	N15-6
RUN16	N16-6
RUN17	N17-6
RUN18	N18-6
RUN19	N19-6
RUN20	N20-6
RUN21	N21-6
RUN22	N22-6
RUN23	N23-6
RUN24	N24-6
RUN25	N25-6
RUN26	N26-6
RUN27	N27-6
RUN28	N28-6

Ilco

Ilco	Corbin Russwin
CB 9	L2-6-90
CB10	70-6-90
CB11	L2-6-50
CB11BH	59B1-6-50
1000	99-5
1000A	99-7
1000AB	99-6
1000K	96-5*
1000KC	26-6*
O1000	99-4*
X1000KC	26-6*
X1000KR	861UB*
1001	97-5
1001A	97-7
1001A1	62A1-6
1001A2	62A2-6
1001AB	97-6
1001ABM	59AB-5
1001AH	59A1-5
1001AM	59A-5
1001BA*	27A1-6
1001BH	59B1-5
1001BM	59B-5
1001C	AR-5
1001C1	59C1-5
1001C2	59C2-5
1001CDM	59CD-5
1001CM	59C-5
1001D1	59D1-5
1001D2	59D2-5
1001DH	59B2-5
1001DM	59D-5
1001E	27-7
1001EA	27-6
1001EB	27-5
1001EG	67-6
1001EH	60-5
1001EJ	69-5

Ilco	Corbin Russwin
1001EK	79-6
1001EL	67-7
1001EN	67-5
1001EP	027-5
1001ES	067
1001FH	59A2-5
1001G*	BR-5
1001GA	BR-7
1001GAR	BL-6
1001GB	BR-5
1001GH	80-5*
1001GR	BL-5
1001GRM	59AD-5
1001MA	57B1-6
1001MB	57A2-6
1001MC new	57D1-6
1001MC old	28-6
1001MD	29-6
1001ME	68-6
1001MG	57B2-6
1001MJ	67A1-6
1001MK	
A1001ABM	59AB-6
A1001AH	59A1-6
A1001AM	59A-6
A1001BH	59B1-6
A1001BM	59B-6
A1001C1	59C1-6
A1001C2	59C2-6
A1001CDM	59CD-6
A1001CM	59C-6
A1001D1	59D1-6
A1001D2	59D2-6
A1001DH	59B2-6
A1001DM	59D-6
A1001EH	60-6
A1001EHR	70-6
A1001FH	59A2-6
A1001GRM	59AD-6

Ilco	Corbin Russwin
A1001HP	68-6
A1001MA	57B1-7
A1001MB	57A2-7
A1001MC	28-7
A1001MD	29-7
A1001MF	57A1-7
A1001MG	57B2-7
A1001MJ	67A1-6
A1001MJR	77A1-6
B1001EJ	69-6
L1001ABM	59AB-7
L1001AH	59A1-7
L1001AM	59A-7
L1001BH	59B1-7
L1001BM	59B-7
L1001C1	59C1-7
L1001C2	59C2-7
L1001CDM	59CD-7
L1001CM	59C-7
L1001D1	59D1-7
L1001D2	59D2-7
L1001DH	59B2-7
L1001DM	59D-7
L1001EH	60-7
L1001FH	59A2-7
L1001GRM	59AD-7
M1001	027-5
O1001E	L2-6
R1001CEM	57ABC-5
R1001ED	57B2-6
R1001EE	57A1-6
R1001EF	57A1-5
R1001EG	77-6
R1001EK	57D2-6
R1001EL	77-7
R1001EM	57ABC-6
R1001EN	77-5
R1001EP	57D1-6

Ilco	Corbin Russwin
R1001ES	077-5
R1001ET	077-6
R1001GA	BL-7
R1001MJ	77A1-5
R1001SA	28-5
R1001SB	29-5
X1001KC	26-6 *
1002A	98-1/2*
1002B	98-1/4*
1002C	98*
1011	852-5
1011-04A	S-3095B*
1011-04AS	H. & H. 4-pin*
1011-28N	N28-5
1011A	252-5
1011AX*	A6-5
1011B	861B*
1011BX*	
1011C*	
1011D1	D1-5
1011D2	D2-5
1011D3	D3-5
1011D4	D4-5
1011D12	D12-5
1011D34	D34-5
1011D41	D41-5
1011E*	
1011G*	A5-5
1011GG*	A4-5
1011GH	751*
1011GJ	
1011H*	A1-5
1011J*	A3-5, A11-5
1011JJ*	A9-5
1011JR*	A7-5
1011K*	A12-5
1011K1	N1-5
1011K2	N2-5

Ilco (Cont'd)

Ilco	Corbin Russwin	Ilco	Corbin Russwin	Ilco	Corbin Russwin	Ilco	Corbin Russwin
1011K3	N3-5	1011X*	905B*	A1011H7	H7-6	L1011L41	L41-7
1011K4	N4-5	A1011-1N	N1-6	A1011H8	H8-6	N1011M	9812-5
1011K5	N5-5	A1011-2N	N2-6	A1011L1	L1-6	N1011P	981-5
1011K6	N6-5	A1011-3N	N3-6	A1011L2	L2-6	N1011S	982-5
1011K7	N7-5	A1011-4N	N4-6	A1011L3	L3-6	N1011T	983-5
1011K8	N8-5	A1011-5N	N5-6	A1011L4	L4-6	R1011X*	
1011K9	N9-5	A1011-6N	N6-6	A1011L12	L12-6	X1011KR	861UB*
1011K10	N10-5	A1011-7N	N7-6	A1011L34	L34-6	1012	752-5
1011K11	N11-5	A1011-8N	N8-6	A1011L41	L41-6	1012A	750B*
1011K12	N12-5	A1011-9N	N9-6	A1011M	9812-6	1012C*	745B*
1011K13	N13-5	A1011-10N	N10-6	A1011P	981-6	1012-D1	D1-5
1011KA*	A2-5	A1011-11N	N11-6	A1011PB	N5-6	1012-D2	D2-5
1011L*	A6-5	A1011-12N	N12-6	A1011PC	N3-6	1012-D3	D3-5
1011L1	L1-5	A1011-13N	N13-6	A1011PD	N1-6	1012-D4	D4-5
1011L2	L2-5	A1011-14N	N14-6	A1011PE	N4-6	1012-D12	D12-5
1011L3	L3-5	A1011-15N	N15-6	A1011PF	N6-6	1012-D34	D34-5
1011L4	L4-5	A1011-16N	N16-6	A1011PG	N7-6	1012-D41	D41-5
1011L12	L12-5	A1011-17N	N17-6	A1011PH	N8-6	1012DM	761B*
1011L34	L34-5	A1011-18N	N18-6	A1011PJ	N9-6	A1012-59A	59A-6
1011L41	L41-5	A1011-19N	N19-6	A1011PK	N2-6	A1012-59A1	59A1-6
1011M	A1x12M-5	A1011-20N	N20-6	A1011PL	N10-6	A1012-59A2	59A2-6
1011MA	A1x12M-6	A1011-21N	N21-6	A1011PM	N11-6	A1012-59AB	59AB-6
1011MK	H81-6	A1011-22N	N22-6	A1011PN	N12-6	A1012-59AD	59AD-6
1011N*	G-5	A1011-23N	N23-6	A1011PR	N13-6	A1012-59B	59B-6
1011P	981-5	A1011-24N	N24-6	A1011PY	N14-6	A1012-59B1	59B1-6
1011PAA	981-7	A1011-25N	N25-6	A1011PZ	N1x13M-6	A1012-59B2	59B2-6
1011PB*	N5-5	A1011-26N	N26-6	A1011PZR	N15x27M-6	A1012-59C	59C-6
1011PC*	N3-5	A1011-27N	N27-6	A1011S	982-6	A1012-59C1	59C1-6
1011PD*	N1-5	A1011-28N	N28-6	A1011T	983-6	A1012-59C2	59C2-6
1011PE*	N4-5	A1011D1	D1-6	B1011D1	D1-7	A1012-59CD	59CD-6
1011PF*	N5-5	A1011D2	D2-6	B1011D2	D2-7	A1012-59D	59D-6
1011PG*	N7-5	A1011D3	D3-6	B1011D3	D3-7	A1012-59D1	59D1-6
1011PH	N8-5	A1011D4	D4-6	B1011D4	D4-7	A1012-59D2	59D2-6
1011PJ*	N9-5	A1011D12	D12-6	B1011D12	D12-7	A1012-D1	D1-6
1011PK*	N2-5	A1011D34	D34-6	B1011D34	D34-7	A1012-D2	D2-6
1011PL*	N10-5	A1011D41	D41-6	B1011D41	D41-7	A1012-D3	D3-6
1011PM	N11-5	A1011H1	H1-6	L1011L1	L1-7	A1012-D4	D4-6
1011PN*	N12-5	A1011H2	H2-6	L1011L2	L2-7	A1012-D12	D12-6
1011PR*	N13-5	A1011H3	H3-6	L1011L3	L3-7	A1012-D34	D34-6
1011PZ	N1x13M-5	A1011H4	H4-6	L1011L4	L4-7	A1012-D41	D41-6
1011S	982-5	A1011H5	H5-6	L1011L12	L12-7	1062V*	740B*
1011T	983-5	A1011H6	H6-6	L1011L34	L34-7		

Taylor

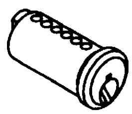
Taylor	Corbin Russwin	Taylor	Corbin Russwin	Taylor	Corbin Russwin	Taylor	Corbin Russwin
20	99-5	22CM	59C-5	55-6A	A6-5	57-8K	N8-7
20A	99-7	22D1	59D1-5	55-6K	N6-5	57-8N	N8-6
20AB	99-6	22D2	59D2-5	55-7A	A7-5	57-9K	N9-7
20K	96-5*	22DM	59D-5	55-7K	N7-5	57-9N	N9-6
20KC	26-6*	22GM	59AB-5	55-8A	A8-5	57-10K	N10-7
L20KC	26-6*	22HM	59CD-5	55-8K	N8-5	57-10N	N10-6
21A	27-6	22Z2	60-5	55-9A	A9-5	57-11K	N11-7
21E	27-7	A22A1	59A1-6	55-9K	N9-5	57-11N	N11-6
21EB	27-5	A22A2	59A2-6	55-10A	A10-5	57-12D	D12-5
21EG	67-6	A22AM	59A-6	55-10K	N10-5	57-12K	N12-7
21EL	67-7	A22B1	59B1-6	55-11A	A11-5	57-12N	N12-6
21EN	67-5	A22B2	59B2-6	55-11K	N11-5	57-13K	N13-7
A21EF	57A1-7	A22BM	59B-6	55-12A	A12-5	57-13N	N13-6
A21EG	57B1-7	A22C1	59C1-6	55-12K	N12-5	57-15N	N15-6
A21EH	57A2-7	A22C2	59C2-6	55-13K	N13-5	57-16N	N16-6
A21EJ	57B2-7	A22CM	59C-6	55A	252-5	57-17N	N17-6
A21HN	BR-7	A22D1	59D1-6	55B	861B	57-18N	N18-6
B21EF	57A1-6	A22D2	59D2-6	55K		57-19N	N19-6
B21EG	57B1-6	A22DM	59D-6	55M	A1x12M-5	57-20N	N20-6
B21EH	57A2-6	A22GM	59AB-6	55P	981-5	57-21N	N21-6
B21EJ	57B2-6	A22HM	59CD-6	55PAA	981-7	57-22N	N22-6
B21EM	57ABC-6	A22Z2	60-6	55PK	N2-5	57-23N	N23-6
B21EP	57D2-6	B22A1	59A1-7	55S	982-5	57-24N	N24-6
B21FK	67A1-6	B22A2	59A2-7	56	752-5	57-25N	N25-6
B21HP	68-6	B22AM	59A-7	56DM	761B*	57-26N	N26-6
C21EF	57A1-5	B22B1	59B1-7	L56K	861UB*	57-27N	N27-6
C21EM	57ABC-5	B22B2	59B2-7	57-1D	D1-5	57-34D	D34-5
C21FK	67A1-5	B22BM	59B-7	57-1H	H1-6	57-41D	D41-5
C21FL	69-5	B22C1	59C1-7	57-1K	N1-7	57M	N1x13M-5
C21FM	067	B22C2	59C2-7	57-1N	N1-6	57MA	N1x13M-6
C21HN	BR-5	B22CM	59C-7	57-2D	D2-5	57MK	
R21EG	77-6	B22D1	59D1-7	57-2H	H2-6	57P	981-5
R21EL	77-7	B22D2	59D2[illegible]	57-2K	N2-7	57PA	981-6
R21EN	77-5	B22DM	59D-7	57-2N	N2-6	57R	751*
RA21HN	BL-7	B22GM	59AB-7	57-3D	D3-5	57SA	982-6
RB21EJ	27A1-6	B22HM	59CD-7	57-3H	H3-6	57T	983-5
RB21FK	77A1-6	K22	80-5*	57-3K	N3-7	57TA	983-6
RB21FL	79-6	K22MK		57-3N	N3-6	A57-1D	D1-6
RB21FM	077-6	23	97-5	57-4D	D4-5	A57-2D	D2-6
RB21HN	BL-6	23A	97-7	57-4H	H4-6	A57-3D	D3-6
RC21EJ	27A1-5	23AB	97-6	57-4K	N4-7	A57-4D	D4-6
RC21FK	77A1-5	55	852-5	57-4N	N4-6	A57-12D	D12-6
RC21FM	077-5	55-1A	A1-5	57-5H	H5-6	A57-34D	D34-6
RC21HN	BL-5	55-1K	N1-5	57-5K	N5-7	A57-41D	D41-6
22A1	59A1-5	55-2A	A2-5	57-5N	N5-6	B57-1D	D1-7
22A2	59A2-5	55-2K	N2-5	57-6H	H6-6	B57-2D	D2-7
22AM	59A-5	55-3A	A3-5	57-6K	N6-7	B57-3D	D3-7
22B1	59B1-5	55-3K	N3-5	57-6N	N6-6	B57-4D	D4-7
22B2	59B2-5	55-4A	A4-5	57-7H	H7-6	B57-12D	D12-7
22BM	59B-5	55-4K	N4-5	57-7K	N7-7	B57-34D	D34-7
22C1	59C1-5	55-5A	A5-5	57-7N	N7-6	B57-41D	D41-7
22C2	59C2-5	55-5K	N5-5	57-8H	H8-6	58MK	H81-6

6-Pin Plugs, Bulk Packs

These packages are priced at a savings over individual plug prices. Keyway availability is limited to L4, D1, H1, 60, 59A1 and 981.

Number	Description
492K90	25 pack for 1 1/8" mortise
492K91	25 pack for 3000 rim
492K92	50 pack for CK4200, UT5200
610K48	50 pack for CL3400

5 and 6-Pin Conventional Plugs

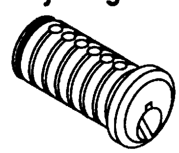


X Class Keyways	Other Keyways	Used In
487K10	121K10	1" mortise (5-pin)
487K11	121K11	1 1/8" mortise
487K12	121K12	1 1/4" mortise
487K14	121K13	1 3/8" mortise
487K16	121K14	1 1/2" mortise
487K18	121K15	1 3/4" mortise
487K20	121K16	2" mortise
487K22	121K85	2 1/4" mortise
487K23	121K86	2 1/2" mortise
487K24	135K04	2 3/4" mortise
487K25	135K05	3" mortise
606K73	193K09	3 1/4" mortise
606K74	193K10	3 1/2" mortise
606K75	193K11	3 3/4" mortise
487K38	197K51*	1001 hotel mortise
559K94	464K97	1004 Brink mortise
559K95	468K87	1005 Brink mortise
488K99	488K98	CK4200, UT5200 (.552") and 2000-051
481K38	n/a	CK4200, UT5200 (.509")
564K53	574K05	CK4400 except below
564K60	564K52	CK4429 hotel
580K99	574K07	CK4455, CK4482 before 8/93
596K29	585K24	CL3400 non-hotel
596K31	585K26	CL3429 hotel
522K91	522K84	DL2000 Series
423K96	405K60	PL5000 padlock
489K49	186K75	2001-051
534K25	245K37	2100 / 2160 (large head)
612K90	444K87	2200-001 and -009
612K91	444K89	2200-002
612K88	444K94	2200-008
612K93	444K88	2200-054
612K94	523K21	2200-076
488K84	253K66	3000 rim cylinder
610K46	146K80	4200-002 for AR pull
	195K68	4266 for MR exit operators
334K01	334K00	8000-6 I-core
	378K18	Fox Police rim cyl. (5-pin)

7-Pin Plugs

X Class Keyways	Other Keyways	Used In
487K13	292K95	1 1/4" mortise
487K15	292K96	1 3/8" mortise
487K17	292K97	1 1/2" mortise
487K19	292K98	1 3/4" mortise
487K21	292K99	2" mortise
606K76	293K00	2 1/4" mortise
606K77	293K01	2 1/2" mortise
606K78	293K02	2 3/4" mortise
606K79	293K03	3" mortise
596K30	585K25	CL3400 non-hotel
596K32	585K27	CL3429 hotel
488K85	253K67	3000-7 rim cylinder
416K08	416K07	8000-7 core

High Security Plugs



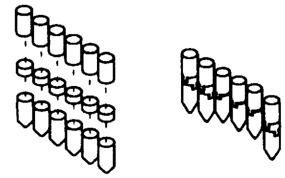
Number	Used In
407K63	1 1/8" mortise
407K64	1 1/4" and 1012
415K73	1 3/8" mortise
415K74	1 1/2" mortise
518K73	1 3/4" mortise
518K74	2" mortise
518K75	2 1/4" mortise
518K76	2 1/2" mortise
518K77	2 3/4" mortise
409K12*	1011 mortise hotel
481K19	1014 Brink mortise
481K28	1015 Brink mortise
408K45	CK4200, UT5200
585K46	CL3400 non-hotel
522K76	DL2000 Series deadlock
444K97	2210-001 and -009
444K98	2210-002
444K96	2210-008
444K99	2210-054
407K65	3010 rim cylinder
483K01	3012 Blockout rim
446K68	8010 interchangeable core

6-Pin Loaded Shells, Bulk Packs

Finishes available for rim and mortise shells: 605, 606, 612, 613, 625, 626

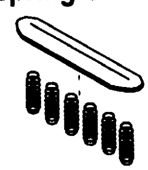
Number	Description
493F76	25 pack for 1000-118 mortise
493F77	25 pack for 3000 rim
493F78	50 pack for CK4200, UT5200
610F49	50 pack for CL3400

Pins (specify size, where applicable)



Number	Description
553F48-4	vial of 100 bottom pins (L)
553F50-2	vial of 100 spool top pins (J)
553F49-2	vial of 100 top/master/build-up pins (M)
546F97-8	vial of 1500 construction balls
407T41-4	pin, high security master, 1 skew
407T42-4	pin, high security master, 2 skew
407T31-4	pin, high security master, 1 skew
407T32-4	pin, high security master, 2 skew
407T33-4	pin, high security master, 3 skew
407T43-4	pin, high security top
197F52-7	pin, blocking for 1001, 1011 (hotel)
159F36-7	ball bearing for wear resistance

Springs & Spring Covers



Number	Description
172F21-7	spring, interchangeable core
493F29-7	superseded by 603F20-7
603F20-7	spring, standard & high security
026F75-7	spring, hotel mortise blocking pin
585F32-7	spring, cylinder cap pin for 2000-034
171F46-8	spring, head of 1100/1160 cyl.
217F42-2	spring cover, 5-pin brass
217F44-2	spring cover, 6-pin brass
314F88-7	spring cover, 6-pin stainless for most 2000 series
217F43-2	spring cover, 7-pin brass
585F39-7	spring cover for 2000-034-7
314F98-7	spring, 2001-034 indicator

Cams

Conventional & High Security

Number	Description
480F05-8	A01 cloverleaf (was 11)
147F77-2	A02 straight, brass (was #1)
147F77-8	A02 straight, steel (was #1)
111F55-8	A03 (was A)
413F22-8	A04 (was J)
105F70-2	A05 AR4070 (was B)
480F06-2	A91 for Russwin G type EMK
266F34-2	A92
281F27-2	A93 (was C)

* Not available with D1, D2, L1, L2, 752, 852 or A Class keyways.

Cams

IC Version

Number	Description
334F14-8	A01 cloverleaf (was 11)
334F13-8	A02 straight (was #1)
362F42-8	A03 (was A)
423F49-8	A04 (was J)
362F50-2	A05 AR4070 (was B)
294F05-2	A63 MR adaptation
308F78-2	A64 MR adaptation
526F66-2	A65 MR adaptation
362F43-2	A93 (was C)

Master Ring

Number	Description
562F40-2	A61 new cloverleaf (most locks after 6/93)
065F36-2	A62 straight (was 1A)
121F01-2	A63 (was 1MR)
135F19-2	A64 (was 2MR)
025F72-2	A65 old cloverleaf (was 11A)

Retainers



Number	Description
173F79-8	.020" plug retainer, for 3300 / 5600, and 1400 / 4300
368F91-8	.030" plug retainer for 3000, 3010, most 2200 Series cyls.
488F92-8	.032" plug retainer for 2000-052, -044 and -051
333F99-8	plug retainer, 8000, CK4400 and 2200-008
421F00-8	plug retainer, DL2000 series
334F23-8	retainer, IC rim tailpiece
365F95-8	retainer, Fox Police rim cylinder
250F08-8	retainer for flex head cylinder

Tailpieces

Number	Description
444F74-8	A21
461F10-8	A22
520F35-8	A23
444F75-8	A24
365F96-8	A38 (Fox square)
329F99-8	A39 (Fox round)
484F95-8	A41
484F92-8	A42
484F91-8	A43
484F96-8	A44
484F93-8	A45
484F94-8	A46
146F78-8	A47
622F29-8	for 2000-034-6
622F30-8	for 2000-034-7
596F89-8	for 2000-038
489F02-8	for 2000-051
585F33-7	for 2001-034
585F35-8	for 2001-034-7
186F74-8	for 2001-051
490F55-8	for 3000-138
253F76-8	for 3000-200
413F48-8	for 3000-200-V
253F77-8	for 3000-312
413F49-8	for 3000-312-V
582F29-8	for 3080-114 for exit alarm options M61 & [illegible]2
253F85-8	for 3080-178
284F13-8	for 3080-318
622F32-8	for Schlage cyl. in CL3400/3600
622F31-8	for Schlage cyl. in CL3800
601F22-9	kit, Sargent in CL3400/CL3600

Other IC Parts

Number	Description
353F86-8	inner cam assy. for 1071 (hotel)
446F57-2	control sleeve for 8000 core
446F58-2	control sleeve for 8010 core
438F42-8	mortise cylinder cam screw
334F12-8	mortise cylinder cam plate
342F03-2	throw member, CK4200, UT5200
496F80-8	throw member, CL3200
622F72-8	throw member packet, CL3400, CL3600 Series
607F97-5	throw member packet, CL800 Series
392F72-2	throw member, mort. cyl. $1\frac{1}{4}$" – $1\frac{1}{2}$"
379F80-2	throw member, mort. cyl. $1\frac{3}{4}$"
392F73-2	throw member, rim cyl.
362F15-3	throw member, padlock
320F44-2	throw member, Best style conv. knob
622F69-8	IC security plate for CL3400/CL3600 throw member
607F91-9	spacer for 6-pin Best core

Other Master Ring Cylinder Parts

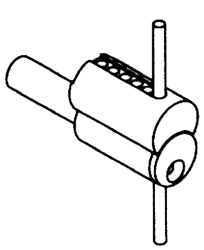
Number	Description
522F93-2	adapter bushing for MR
135F10-8	backplate, MR rim
158F06-2	cam spacer for A61, A62, A65
562F41-2	thumbturn hub for A61 MR cam
562F42-2	kit, A61 cam / hub conversion
488F10-8	mortise cylinder set screw pkt.
354F19-8	thumbturn disk, A64 cam

Other Mortise/Rim Cylinder Parts

Number	Description
253F75-8	backplate, rim cylinder
438F41-8	cam screw
488F08-8	mortise cylinder set screw pkt.
021F68-8	screw, rim cyl. mounting, $2\frac{9}{32}$"
021F71-8	screw, rim cyl. mounting, $3\frac{1}{8}$"

Other Knob/Lever Cylinder Parts

Number	Description
585F30-2	2001-034 type cap
585F31-2	2001-034 type cap pm
585F36-7	2001-034 tailpiece anchor
585F38-7	2001-034 indicator fork
585F37-7	2001-034 stabilizer pin
314F99-7	2001-034-6 indicator pin
585F40-7	2001-034-7 indicator pin
550F50-8	B2, G2, G3 exit knob tailpiece adapter
304F55-6	key, emergency for mortise privacy
041F47-8	key, hotel shut-out
144F29-8	plug driver, A standard
145F32-8	plug driver, N



Cylinder Service Tools

Number	Description
CT-93	tool kit contains 1 each: CT-4, CT-11, CT-19, CT-21, CT-22, CT-23, CT-26, CT-54 CT-80
CT-4	plug follower, .509" brass
CT-5	pin chamber reamer
CT-7	pin chamber burring tool
CT-10	loading tool for .509" shells
CT-11	key gauge, all Corbin key classes
CT-19	tweezers (was CT-6)
CT-21	key gauge, Russwin N
CT-22	key gauge, Russwin D & H
CT-23	key gauge, Russwin 981 / 852
CT-25	pliers for CK4200 / UT5200 knob shank retainer (was 101F78-8)
CT-26	pliers for plug retainers (was 239F35-8)
CT-27	pliers for UT5200 lever designs (was 103F92-8)
CT-54	plug follower, .552" brass
CT-80	IC mortise cyl. installation wrench
484F72-9	follower, disposable, .509" plug (order in mult. of 50)
484F73-9	follower, disposable, .552" plug (order in mult. of 100)
594K05-9	Corbin plug board K62
592F14-9	Russwin plug board M12R

Primary Terms From

The Professional Glossary of Terms Relating to

Cylinders, Keys and Master Keying

Printed in USA

– A –

actuator
n. a device, usually connected to a cylinder, which, when activated, may cause a lock mechanism to operate

adjustable mortise cylinder
n. any mortise cylinder whose length can be adjusted for a better fit in doors of varying thickness

AFTE
abb. Association of Firearm and Toolmark Examiners

AHC
abb. Architectural Hardware Consultant (as certified by DHI)

all–section key blank
n. the key section which enters all keyways of a multiplex key system

ALOA
abb. Associated Locksmiths of America

angularly bitted key
n. a key which has cuts made into the blade at various degrees of rotation from the perpendicular

ANSI
abb. American National Standards Institute

ASIS
abb. American Society for Industrial Security

associated change key
n. a change key which is related directly to particular master key(s) through the use of constant cuts

associated master key
n. a master key which has particular change keys related directly to its combination through the use of constant cuts

ASTM
abb. American Society for Testing and Materials

ATT
symbol for attendant's key

attendant's key
n. a selective master key used in a hospital keying system

– B –

back plate
n. a thin piece of metal, usually with a concave portion, used with machine screws to fasten certain types of cylinders to a door

ball bearing
n. 1. a metal ball used in the pin stack to accomplish some types of hotel or construction keying 2. a ball, usually made of steel, used by some lock manufacturers as the bottom element in the pin stack in one or more pin chambers 3. any metal ball used as a tumbler's primary component

Barron, Robert
the Englishman credited with the invention of the double–acting lever tumbler in 1778

Bell type key
n. a key whose cuts are in the form of wavy grooves milled into the flat sides of the key blade. The grooves usually run the entire length of the blade.

bezel
n. a threaded collar commonly used to secure certain cylinder or lock assemblies

BHMA
abb. Builders Hardware Manufacturers Association

bible
n. that portion of the cylinder shell which normally houses the pin chambers, especially those of a key–in–knob cylinder or certain rim cylinders

bicentric cylinder
n. a cylinder which has two independent plugs, usually with different keyways. Both plugs are operable from the same face of the cylinder. It is designed for use in extensive master key systems.

bi–directional cylinder
n. a cylinder which may be operated in a clockwise and counterclockwise direction by a single key

binary cut key
n. a key whose combination only allows for two possibilities in each bitting position: cut/no cut

binary type cylinder or lock
n. a cylinder or lock whose combination only allows for two bitting possibilities in each bitting position

bit
1. n. the part of the key which serves as the blade, usually for use in a warded or lever tumbler lock 3. v. to cut a key

bit key
n. a key with one or more projecting bits

bitting
n. 1. the number(s) which represent(s) the dimensions of the key cut(s) 2. the actual cut(s) or combination of a key

bitting depth
n. the depth of a cut which is made into the blade of a key

bitting list
n. a listing of all the key combinations used within a system. The combinations are usually arranged in order of the blind code, direct code, and/or key symbol.

bitting position
n. 1. the location of a key cut

blade
n. the portion of a key which may contain the cuts and/or milling

blank
2. adj. uncut

blind code
n. a designation, unrelated to the bitting, assigned to a particular key combination for future reference when additional keys or cylinders may be needed

block master key
n. the one pin master key for all combinations listed as a block in the standard progression format

BM
abb. block master key

bottom of blade
n. the portion of the blade opposite the cut edge of a single bitted key

bottom pin
n. usually a cylindrical shaped tumbler which may be conical, ball shaped or chisel pointed on the end which makes contact with the key

bow
n. the portion of the key which serves as a grip or handle

bow stop
n. a type of stop located near the key bow

box of wards
n. a complete unit of intricate wards installed in or on a lock case

Bramah, Joseph
the Englishman who had the world's first patent of a locking mechanism in 1784. It was the first lock incorporating a cylinder whose key did not contact the lock bolt directly

Bramah type lock
n. a lock or cylinder using a mechanism with sliders, normally arranged in a circle

bridge ward
n. a center ward attached to the interior of a lock by means of a bracket

broach
1. n. a tool used to cut the keyway into the cylinder plug 2. v. to cut the keyway into a cylinder plug with a broach

building master key
n. a master key which operates all or most master keyed locks in a given building

build–up pin
n. the additional element of a pin stack required to allow operation at different shear lines in a cylinder

bypass key
n. the key which operates a key override cylinder

– C –

cam
n. 1. a lock or cylinder component which transfers the rotational motion of a key or cylinder plug to the bolt works of a lock
2. the bolt of a cam lock

cam lock
n. a complete locking assembly in the form of a cylinder whose cam is the actual locking bolt

cap
1. n. a spring cover for a single pin chamber
2. n. a part which may serve as a plug retainer and/or a holder for the tailpiece.
3. v. to install a cap

capping block
n. a holding fixture for certain interchangeable cores which aids in the installation of the caps

case ward
n. any ward directly attached to or projecting from a lock case

chamber
n. any cavity in a cylinder plug and/or shell which houses the tumbler(s)

change key
n. 1. a key which operates only one cylinder or one group of keyed alike cylinders in a keying system

changeable bit key
n. a key which can be recombinated by exchanging and/or rearranging portions of its bit or blade

CK
1. abb. change key
2. abb. control key

clipper
n. a hand held key bitting punch, often incorporating a trigger–like handle

closed gated
adj. pertaining to a lever tumbler whose gate is pierced into the body of the tumbler. The lever(s) surround the fence in both the locked and unlocked positions.

clutch
n. that part of a profile cylinder which transfers rotational motion from the inside or outside element to a common cam or actuator

CMK
abb. construction master key

CMK'd
abb. construction master keyed

code
1. n. a designation assigned to a particular key combination for reference when additional keys or cylinders may be needed. See also, "blind code", "direct code", and "key symbol"

code key
n. a key cut to a specific code rather than duplicated from a pattern key. It may or may not conform to the lock manufacturer's specifications

code original key
n. a code key which conforms to the lock manufacturer's specifications

combinate
v. to set a combination in a lock, cylinder or key

combination
n. the group of numbers which represent the bitting of a key and/or the tumblers of a lock or cylinder

combination wafer
n. a type of disc tumbler used in certain binary type disc tumbler key–in–knob locks. Its presence requires that a cut be made in that position of the operating key(s)

compensate drivers
v. 1. to select longer or shorter top pins, depending on the length of the rest of the pin stack, in order to achieve a uniform pin stack height

complementary keyway
n. usually a disc tumbler keyway used in master keying. It accepts keys of different sections whose blades contact different bearing surfaces of the tumblers.

composite keyway
n. a keyway which has been enlarged to accept more than one key section, often key sections of more than one manufacturer.

compound bitted key
n. a key with at least one compound cut

compound cut
n. a bitting which has another bitting dimension within its dimensions

concealed shell cylinder
n. a specially constructed (usually mortise) cylinder. Only the plug face is visible when the lock trim is in place.

constant cut
n. 1. Any bitting(s) which are identical in corresponding positions from one key to another in a keying system. They usually serve to group these keys together within a given level of keying, and/or link them with keys of other levels.

construction breakout key
n. a key used by some manufacturers to render all construction master keys permanently inoperative

construction core
n. an interchangeable or removable core designed for use during the construction phase of a building. The cores are normally keyed alike and, upon completion of construction, they are to be replaced by the permanent system's cores.

construction master key
n. a key normally used by construction personnel for a temporary period during building construction. It may be rendered permanently inoperative without disassembling the cylinder.

construction master keyed
adj. of or pertaining to a cylinder which is or is to be operated temporarily by a construction master key

control chamber
n. in an interchangeable or removable core, any chamber which has a control shear line which is different from the operating shear line

control cut
n. 1. any bitting which operates the retaining device of an interchangeable or removable core

control dimension
n. in certain interchangeable or removable cores, the distance between the operating shear line and the control shear line, expressed either in units of the increment or as a measurement

control key
n. 1. a key whose only purpose is to remove and/or install an interchangeable or removable core 2. a bypass key used to operate and/or reset some combination type locks 3. a key which allows disassembly of some removable cylinder locks

control lug
n. that part of an interchangeable or removable core retaining device which locks the core into its housing

control shear line
n. the shear line which allows operation of the control lug of an interchangeable or removable core

control sleeve
n. the part of an interchangeable or removable core retaining device which surrounds the plug

controlled cross keying
n. a condition in which two or more different keys of the same level of keying and under the same higher level key(s) operate one cylinder by design; e.g., XAA1 operated by AA2 (but not XAA1 operated by AB1)
NOTE: This condition could severely limit the security of the cylinder and the maximum expansion of the system when (1) more than a few of these different keys operate a cylinder, or (2) more than a few differently cross keyed cylinders per system are required.

core
n. a complete unit, often with a figure 8 shape, which usually consists of the plug, shell, tumblers, springs, plug retainer and spring cover(s). It is primarily used in removable and interchangeable core cylinders and locks.

CPP
abb. Certified Protection Professional (as certified by ASIS)

cross keying
n. the deliberate process of combinating a cylinder (usually in a master key system) to two or more different keys which would not normally be expected to operate it together. See also "controlled cross keying", "uncontrolled cross keying".

cruciform key
n. adj. of or pertaining to a key section or keyway which usually resembles a plus sign ("+") or the letter "X"

CSI
abb. Construction Specifiers Institute

cut
2. v. to make cuts into a key blade

cut angle
n. 1. a measurement, usually expressed in degrees, for the angle between the two sides of a key cut

cut edge
n. the portion of the key blade which contains the cuts

cut key
n. a key which has been bitted or combinated

cut root
n. the bottom of a key cut

cut root shape
n. the shape of the bottom of a key cut. It may have a flat or radius of a specific dimension, or be a perfect "V".

cutter
n. the part of a key machine which makes the cuts into the key blank

cylinder
n. a complete operating unit which usually consists of the plug, shell, tumblers, springs, plug retainer, a cam/tailpiece or other actuating device, and all other necessary operating parts

cylinder blank
n. a dummy cylinder which has a solid face and no operating parts

cylinder clip
n. a spring steel device used to secure some types of cylinders

cylinder collar
n. a plate or ring installed under the head of a cylinder to improve appearance and/or security

cylinder guard
n. a protective cylinder mounting device

cylinder key
n. a broad generic term including virtually all pin and disc tumbler keys

– D –

declining step key
n. a key whose cuts are progressively deeper from bow to tip

decode
v. to determine a key combination by physical measurement of a key and/or cylinder parts

decoder gauge
n. a measuring device which helps determine the combination of a lock or cylinder without removing the tumblers

degree of rotation
n. a specification for the angle at which a cut is made into a key blade as referenced from the perpendicular; e.g., right (R or 2), left (L or 1) or center (=perpendicular) (C). This specification is typically used for some high security keys.

department master key
n. a master key which operates all or most master keyed locks of a given department

depth key set
n. a set of keys used to make a code original key on a key duplicating machine to a lock manufacturer's given set of key bitting specifications. Each key is cut with the correct spacing to one depth only in all bitting positions, with one key for each depth.

derived series
n. a series of blind codes and bittings which are directly related to those of another bitting list

DHI
abb. Door and Hardware Institute

dimple
n. a key cut in a dimple key

dimple key
n. a key whose cuts are drilled or milled into its blade surfaces. The cuts normally do not change the blade silhouette.

direct code
n. a designation assigned to a particular key which includes the actual combination of the key

disc tumbler
n. 1. a flat tumbler which must be drawn into the cylinder plug by the proper key so that none of its extremities extends into the shell
2. a flat, usually rectangular tumbler with a gate which must be aligned with a sidebar by the proper key

display key
n. a special change key in a hotel master key system which will allow access to one designated guest room, even if the lock is in the shut out mode. It may also act as a shut out key for that room.

dogging cylinder
n. a key operated cylinder used to dog an exit device

dogging key
n. a key or tool used to dog an exit device

double–acting lever tumbler
n. one which must be lifted a precise amount, neither too little nor too much to allow movement of a bolt

double bitted key
n. a key bitted on two opposite surfaces

double cylinder
adj. pertaining to a lock with two keyed cylinders

double–D
n . a shape consisting of two opposing arcs and two opposing flats
adj. having such a shape

double pin
v. to place more than one master pin in a single pin chamber

drilled key
n. a type of bit key with a hole drilled into the shank from the tip

driver spring
n. a spring placed on top of the pin stack to exert pressure on the pin tumblers

drop
2. a pivoting or swinging dust cover

dual custody
1. n. a function designed to require the presence of two persons with two different keys, combinations or codes to operate the same device
2. adj. pertaining to such a function

dummy cylinder
n. a non–functional facsimile of a rim or mortise cylinder used for appearance only, usually to conceal a cylinder hole

duplicate
2. v. to copy

duplicate key
n. any key reproduced from a pattern key

dust cover
n. a device designed to prevent foreign matter from entering a mechanism through the keyway

dustproof cylinder
n. a cylinder designed to prevent foreign matter from entering either end of the keyway

– E –

effective plug diameter
n. the dimension obtained by adding the root depth of a key cut to the length of its corresponding bottom pin which establishes a perfect shear line. This will not necessarily be the same as the actual plug diameter.

ejector hole
n. a hole found on the bottom of certain interchangeable cores under each pin chamber. It provides a path for the ejector pin.

ejector pin
n. a tool used to drive all the elements of a pin chamber out of certain interchangeable cores

emergency key
n. 2. the key which operates a privacy function lockset

emergency master key
n. a special master key which usually operates all guest room locks in a hotel master key system at all times, even in the shut out mode. This key may also act as a shut out key.

EMK
abb. emergency master key

end ward
n. a ward which prevents complete insertion and/or rotation of an incorrect key by forming an obstruction the end of the key

end ward cut
n. any cut made into a key to bypass an end ward

ENG
symbol for engineer's key

engineer's key
n. a selective master key which is used by maintenance personnel to operate many locks under different master keys in a system of three or more levels of keying

escutcheon
n. a surface mounted trim which enhances the appearance and/or security of a lock installation

extractor key
n. a tool which normally removes a portion of a two–piece key or blocking device from a keyway

– F –

factory original key
n. the cut key furnished by the lock manufacturer for a lock or cylinder

fence
n. any locking element other than a sidebar or shackle designed to enter a tumbler's gate

finish
n. a material, coloring and/or texturing specification

fireman's key
n. a key used to override normal operation of elevators, bringing them to the ground floor

first generation duplicate
n. a key which was duplicated using a factory original key or a code original key as a pattern

first key
n. any key produced without the use of a pattern key

five column progression
n. a process wherein key bittings are obtained by using the cut possibilities in five columns of the key bitting array

five pin master key
n. a master key for all combinations obtained by progressing five bitting positions

flexible head mortise cylinder
n. an adjustable mortise cylinder which can be extended against spring pressure to a slightly longer length

floor master key
n. a master key which operates all or most master keyed locks on a particular floor of a building

foot
n. the cam portion of the trunion assembly in some lever tumbler locks

four column progression
n. a process wherein key bittings are obtained by using the cut possibilities in four columns of the key bitting array

four pin master key
n. a master key for all combinations obtained by progressing four bitting positions

– G –

gate
n. a notch cut into the edge of a tumbler to accept a fence or sidebar

GGGMK
abb. great great grand master key

GGGMK'd
abb. great great grand master keyed

GGM
abb. great grand master key

GGMK
abb. great grand master key

GGMK'd
abb. great grand master keyed

GM
abb. grand master key

GMK
abb. grand master key

GMK section
abb. grand master key section

GMK'd
abb. grand master keyed

graduated drivers
n. 1. a set of top pins of different lengths. Usage is based on the height of the rest of the pin stack, in order to achieve a uniform pin stack height.

grand master key
n. the key which operates two or more separate groups of locks, which are each operated by a different master key

grand master key system
n. a master key system which has exactly three levels of keying

grand master keyed
adj. of or pertaining to a lock or cylinder which is or is to be keyed into a grand master key system

great grand master key
n. the key which operates two or more separate groups of locks which are each operated by a different grand master key

great grand master key system
n. a master key system which has exactly four levels of keying

great grand master keyed
adj. of or pertaining to a lock or cylinder which is or is to be keyed into a great grand master key system

great great grand master key
n. the key which operates two or more separate groups of locks which are each operated by different great grand master keys

great great grand master key system
n. a master key system which has five or more levels of keying

great great grand master keyed
adj. of or pertaining to a lock or cylinder which is or is to be keyed into a great great grand master key system

guard key
n. a key which must be used in conjunction with a renter's key to unlock a safe deposit lock. It is usually the same for every lock within an installation.

guest key
n. a key in a hotel master key system which is normally used to unlock only the one guest room for which it was intended, but will not operate the lock in the shut out mode

guide
n. that part of a key machine which follows the cuts of a pattern key or template during duplication

– H –

hardware schedule
n. a listing of the door hardware used on a particular job. It includes the types of hardware, manufacturers, locations, finishes, and sizes. It should include a keying schedule specifying how each locking device is to be keyed.

HGM
abb. horizontal group master key

high security cylinder
n. a cylinder which offers a greater degree of resistance to any or all of the following: picking, impressioning, key duplication, drilling or other forms of forcible entry

high security key
n. a key for a high security cylinder

HKP
abb. housekeeper's key

hold open cylinder
n. a cylinder provided with a special cam which will hold a latch bolt in the retracted position when so set by the key

holding fixture
n. a device which holds cylinder plugs, cylinders, housings, and/or cores to facilitate the installation of tumblers, springs and/or spring covers

hollow driver
n. a top pin hollowed out on one end to receive the spring, typically used in cylinders with extremely limited clearance in the pin chambers

horizontal group master key
n. the two pin master key for all combinations listed in all blocks in a line across the page in the standard progression format

horn
n. in a non–cylinder lock, the housing which surrounds the nose and extends through the door or drawer

housekeeper's key
n. a selective master key in a hotel master key system which may operate all guest and linen rooms and other housekeeping areas

housing
n. that part of a locking device which is designed to hold a core

– I –

impression
1. n. the mark made by a tumbler on its key cut
2. v. to fit a key by the impression technique

impression technique
n. a means of fitting a key directly to a locked cylinder by manipulating a blank in the keyway and cutting the blank where the tumblers have made marks

incidental master key
n. a key cut to an unplanned shear line created when the cylinder is combinated to the top master key and a change key

increment
n. a usually uniform increase or decrease in the successive depths of a key cut which must be matched by a corresponding change in the tumblers

indicator
n. a device which provides visual evidence that a deadbolt is extended or that a lock is in the shut out mode

individual key
n. 1. an operating key for a lock or cylinder which is not part of a keying system

interchangeable core
n. a key removable core which can be used in all or most of the core manufacturer's product line. No tools (other than the control key) are required for removal of the core.

interlocking pin tumbler
n. a type of pin tumbler which is designed to be linked together with all other tumblers in its chamber when the cylinder plug is in the locked position

– J –

jumbo cylinder
n. a rim or mortise cylinder of 1–1/2" diameter

– K –

k
symbol for "keys" used after a numerical designation of the quantity of the keys requested to be supplied with the cylinders; e.g., 1k, 2k, 3k, etc. It is usually found in hardware/keying schedules.

KA
abb. keyed alike

KA1, KA2, etc.
symbol which indicates that all cylinders so designated are or are to be operated by the same key(s). The numerical designation indicates the keyed alike group or set.

KA/2, KA/3, etc.
symbol used to indicate the quantity of locks or cylinders in keyed alike groups. These groups are usually formed from a larger quantity; e.g., 30 cylinders KA/2.

KBA
abb. key bitting array

KD
abb. keyed different

key
n. a properly combinated device which is, or most closely resembles, the device specifically intended by the lock manufacturer to operate the corresponding lock

key bitting array
n. a matrix (graphic) display of all possible bittings for change keys and master keys as related to the top master key

key bitting specifications
n. pl. the technical data required to bit a given (family of) key blank(s) to the lock manufacturer's dimensions

key bitting punch
n. a manually operated device which stamps or punches the cuts into the key blade, rather than grinding or milling them

key blank
n. any material manufactured to the proper size and configuration which allows its entry into the keyway of a specific locking device. A key blank has not yet been combinated or cut.

key changeable
adj. of or pertaining to a lock or cylinder which can be recombinated without disassembly, by the use of a key. The use of a tool may also be required.

key coding machine
n. a key machine designed for the production of code keys. It may or may not also serve as a duplicating machine.

key control
n. 1. any method or procedure which limits unauthorized acquisition of a key and/or controls distribution of authorized keys
2. a systematic organization of keys and key records

key cut(s)
n. the portion of the key blade which remains after being cut and which aligns the tumbler(s)

key cut profile
n. the shape of a key cut, including the cut angle and the cut root shape

key duplicating machine
n. a key machine which is designed to make copies from a pattern key

key gauge
n. a usually flat device with a cutaway portion indexed with a given set of depth or spacing specifications. It is used to help determine the combination of a key.

key–in–knob cylinder
n. a cylinder used in a key–in–knob lockset

key interchange
n. an undesirable condition, usually in a master key system, whereby a key unintentionally operates a cylinder or lock

key machine
n. any machine designed to cut keys. See also "key coding machine" and "key duplicating machine."

key manipulation
n. manipulation of an incorrect key in order to operate a lock or cylinder

key milling
n. the grooves machined into the length of the key blade to allow its entry into the keyway

key override
1. n. a provision allowing interruption or circumvention of normal operation of a combination lock or electrical device
2. adj. of or pertaining to such a provision, as in "key override cylinder"

key override cylinder
n. a lock cylinder installed in a device to provide a key override function

key pull position
n. any position of the cylinder plug at which the key can be removed

key records
n. pl. records which typically include some or all of the following: bitting list, key bitting array, key system schematic, end user, number of keys/cylinders issued, names of persons to whom keys were issued, hardware/keying schedule

key retaining
adj. 1. of or pertaining to a lock which must be locked before its key can be removed
2. of or pertaining to a cylinder or lock which may prevent removal of a key without the use of an additional key and/or tool

key section
n. the exact cross sectional configuration of a key blade as viewed from the bow toward the tip

key switch
n. a switch operated by a keyed lock mechanism which may be an integral part of the switch assembly

key symbol
n. a designation used for a key combination in the standard key coding system, e.g., A, AA, AA1, etc.

key system schematic
n. a drawing with blocks utilizing keying symbols, usually illustrating the hierarchy of all keys within a master key system. It indicates the structure and total expansion of the system.

key trap core/cylinder
n. a special core or cylinder designed to capture any key to which it is combinated, once that key is inserted and turned slightly

keyed
adj. 1. combinated
2. having provision for operation by key

keyed alike
adj. of or pertaining to two or more locks or cylinders which have or are to have the same combination. They may or may not be part of a keying system.

keyed different
adj. of or pertaining to a group of locks or cylinders, each of which is or is to be combinated differently from the others. They may or may not be part of a keying system.

keyed random
adj. of or pertaining to a cylinder or group of cylinders selected from a limited inventory of different key changes. Duplicate bittings may occur.

keyhole
n. the opening through which a non–cylinder key must pass to enter a lock

keyhole plate
n. an escutcheon for a keyhole

keying
n. any specification for how a cylinder or group of cylinders are or are to be combinated in order to control access

keying conference
n. a meeting of the end user and the key system supplier at which the keying and levels of keying, including future expansion, are determined and specified

keying kit
n. a compartmented container which holds an assortment of tumblers, springs and/or other parts

keying schedule
n. a detailed specification of the keying system listing how all cylinders are to be keyed and the quantities, markings, and shipping instructions of all keys and/or cylinders to be provided

keying symbol
n. a designation used for a lock or cylinder combination in the standard key coding system; e.g., AA1, XAA1, X1X, etc.

keyway
n. 1. the opening in a lock or cylinder which is shaped to accept a key bit or blade of a proper configuration
2. the exact cross sectional configuration of a keyway as viewed from the front. It is not necessarily the same as the key section.

keyway post
n. 1. the projecting pin of a lock or cylinder which enters the hollow end of a key

keyway unit
n. the plug of certain binary type disc tumbler key–in–knob locks

keyway ward
n. a ward which prevents entry of an incorrect key into a cylinder lock

KR
1. abb. keyed random
2. abb. key retaining

KWY
abb. keyway

– L –

layout tray
n. a compartmented container used to organize cylinder parts during keying or servicing

lazy cam/tailpiece
n. a cam or tailpiece designed to remain stationary while the cylinder plug is partially rotated and/or vice–versa

levels of keying

n. pl. the divisions of a master key system into hierarchies of access, as shown in the following tables. Note that the standard key coding system has been expanded to include key symbols for systems of more than four levels of keying.

TWO LEVEL SYSTEM

Level of Keying	Key Name	abb.	Key Symbol
Level II	master key	MK	AA
Level I	change key	CK	1AA, 2AA, etc.

THREE LEVEL SYSTEM

Level of Keying	Key Name	abb.	Key Symbol
Level III	grand master key	GMK	A
Level II	master key	MK	AA, AB, etc.
Level I	change key	CK	AA1, AA2, etc.

FOUR LEVEL SYSTEM

Level of Keying	Key Name	abb.	Key Symbol
Level IV	great grand master key	GGMK	GGMK
Level III	grand master key	GMK	A, B, etc.
Level II	master key	MK	AA, AB, etc.
Level I	change key	CK	AA1, AA2, etc.

FIVE LEVEL SYSTEM

Level of Keying	Key Name	abb.	Key Symbol
Level V	great great grand master key	GGGMK	GGGMK
Level IV	great grand master key	GGMK	A, B, etc.
Level III	grand master key	GMK	AA, AB, etc.
Level II	master key	MK	AAA, AAB, etc.
Level I	change key	CK	AAA1, AAA2, etc.

SIX LEVEL SYSTEM

Level of Keying	Key Name	abb.	Key Symbol
Level VI	great great grand master key	GGGMK	GGGMK
Level V	great grand master key	GGMK	A, B, etc.
Level IV	grand master key	GMK	AA, AB, etc.
Level III	master key	MK	AAA, AAB, etc.
Level II	sub-master key	SMK	AAAA, AAAB, etc.
Level I	change key	CK	AAAA1, AAAA2, etc

lever pack
n. a set of lever tumblers

lever tumbler
n. usually a flat, spring–loaded tumbler which pivots on a post.

loading tool
n. a tool which aids installation of cylinder components into the cylinder shell

lock
n. any device which prevents access or use by requiring special knowledge or equipment

lockout
n. any situation in which the normal operation of a lock or cylinder is prevented

lockout key
n. a key made in two pieces. One piece is trapped in the keyway by the tumblers when inserted and blocks entry of any regular key. The second piece is used to remove the first piece.

– M –

MACS
abb. maximum adjacent cut specification

maid's master key
n. the master key in a hotel master key system given to the maid. It operates only cylinders of the guest rooms and linen closets in the maid's designated area.

maison key system
n. [from the French, meaning "house" key system] a keying system in which one or more cylinders are operated by every key (or relatively large numbers of different keys) in the system; e.g., main entrances of apartment buildings operated by all individual suite keys of the building

manipulation key
n. any key other than a correct key which can be variably positioned and/or manipulated in a keyway to operate a lock or cylinder

master disc
3. a special disc tumbler with multiple gates to receive a sidebar.

master key
1. n. a key which operates all the master keyed locks or cylinders in a group, each lock or cylinder usually operated by its own change key
2. v. to combinate a group of locks or cylinders such that each is operated by its own change key as well as by a master key for the entire group

master key changes
n. the number of different usable change keys available under a given master key

master key system
n. 1. any keying arrangement which has two or more levels of keying
2. a keying arrangement which has exactly two levels of keying

master keyed
adj. of or pertaining to a cylinder or group of cylinders which are or are to be combinated so that all may be operated by their own change key(s) and by additional key(s) known as master key(s)

master keyed only
adj. of or pertaining to a lock or cylinder which is or is to be combinated only to a master key

master lever
n. a lever tumbler which can align some or all other levers in its lock so that their gates are at the fence. It is typically used in locker locks.

master pin
n. 1. usually a cylindrical shaped tumbler, flat on both ends, placed between the top and bottom pin to create an additional shear line
2. a pin tumbler with multiple gates to accept a sidebar

master ring
n. a tube shaped sleeve located between the plug and shell of certain cylinders to create a second shear line. Normally the plug shear line is used for change key combinations and the shell shear line is used for master key combinations.

master ring lock/cylinder
n. a lock or cylinder equipped with a master ring

master wafer
n. a ward used in certain binary type disc tumbler key–in– knob locks

maximum adjacent cut specification
n. the maximum allowable difference between adjacent cut depths

maximum opposing cut specification
n. the maximum allowable depths to which opposing cuts can be made without breaking through the key blade. This is typically a consideration with dimple keys.

metal desk lock
n. a cabinet lock with a vertically sliding bolt located at the rear of the cylinder

mis–cut
1. adj. of or pertaining to a key which has been cut incorrectly
2. n. a mis–cut key

MK
abb. master key

MK'd
abb. master keyed

MK'd only
abb. master keyed only

MK section
abb. master key section

MOCS
abb. maximum opposing cut specification

mogul cylinder
n. a very large pin tumbler cylinder whose pins, springs, key, etc. are also proportionally increased in size. It is typically used in prison locks.

mortise cylinder
n. a threaded cylinder typically used in mortise locks of American manufacture

multi–section key blank
n. a key section which enters more than one, but not all keyways in a multiplex key system

multiple gating
n. a means of master keying by providing a tumbler with more than one gate

multiplex key blank
n. any key blank which is part of a multiplex key system

multiplex key system
n. 1. a series of different key sections which may be used to expand a master key system by repeating bittings on additional key sections. The keys of one key section will not enter the keyway of another key section. This type of system always includes another key section which will enter more than one, or all of the keyways.
2. a keying system which uses such keyways and key sections

mushroom pin
n. a pin tumbler, usually a top pin, which resembles a mushroom. It is typically used to increase pick resistance.

– N –

NCK
symbol for "no change key" primarily used in hardware schedules

neck (of a key)
n. 1. the portion of a bit key between the shoulder and the bit(s)
2. the portion of a cylinder key between the shoulder and the bow

negative locking
n. locking achieved solely by spring pressure or gravity which prevents a key cut too deeply from operating a lock or cylinder

NKR
abb. non key retaining

NMK
a keying symbol which means "not master keyed" and is suffixed in parentheses to the regular key symbol. It indicates that the cylinder is not to be operated by the master key(s) specified in the regular key symbol; e.g., AB6(NMK).

non key retaining
adj. of or pertaining to a lock whose key can be removed in both the locked and unlocked positions

non–keyed
adj. having no provision for key operation
NOTE: This term also includes privacy function locksets operated by an emergency key.

non–original key blank
n. any key blank other than an original key blank

nose
n. the part of a non–cylinder lock which contains the keyway and rotates within a horn

NUR
symbol for nurse's key

nurse's key
n. a selective master key used in a hospital keying system

– O –

odometer method
n. a means of progressing key bittings using a progression sequence of right to left

one bitted
adj. of or pertaining to a cylinder which is or is to be combinated to keys cut to the manufacturer's reference number one bitting.

one column progression
n. a process wherein key bittings are obtained by using the cut possibilities in one column of the key bitting array

one pin master key
n. a master key for all combinations obtained by progressing only one bitting position

open gated
adj. pertaining to a lever tumbler whose gate is in the edge of the tumbler.

operating key
n. 1. any key which will properly operate a lock or cylinder to lock or unlock the lock mechanism and is not a control key or reset key

operating shear line
n. the shear line of a cylinder which allows normal operation of a lock

original key blank
n. a key blank supplied by the lock manufacturer to fit that manufacturer's specific product

– P –

page master key
n. the three pin master key for all combinations listed on a page in the standard progression format

paracentric
adj. 1. of or pertaining to a keyway with one or more wards on each side projecting beyond the vertical center line of the keyway to hinder picking
2. of or pertaining to a key blank made to enter such a keyway

pattern key
n. 1. an original key kept on file to use in a key duplicating machine when additional keys are required
2. any key which is used in a key duplicating machine to create a duplicate key

peanut cylinder
n. a mortise cylinder of 3/4" diameter

pick
1. n. a tool or instrument, other than the specifically designed key, made for the purpose of manipulating tumblers in a lock or cylinder into the locked or unlocked position through the keyway, without obvious damage
2. v. to manipulate tumblers in a keyed lock mechanism through the keyway, without obvious damage, by means other than the specifically designed key

pick key
n. a type of manipulation key, cut or modified to operate a lock or cylinder

pin
v. to install pin tumblers into a cylinder and/or cylinder plug

pin chamber
n. the corresponding hole drilled into the cylinder shell and/or plug to accept the pin(s) and spring

pin kit
n. a type of keying kit for a pin tumbler mechanism

pin stack
n. 1. all the tumblers in a given pin chamber

pin stack height
n. the measurement of a pin stack, often expressed in units of the lock manufacturer's increment or as an actual dimension

pin tumbler
n. usually a cylindrical shaped tumbler. Three types are normally used: bottom pin, master pin and top pin.

pin tweezers
n. pl. a tool used in handling tumblers and springs

pinning block
n. a holding fixture which assists in the loading of tumblers into a cylinder or cylinder plug

pinning chart
n. a numerical diagram which indicates the sizes and order of installation of the various pins into a cylinder. The sizes are usually indicated by a manufacturer's reference number which equals the quantity of increments a tumbler represents.

plug
n. the part of a cylinder which contains the keyway, with tumbler chambers usually corresponding to those in the cylinder shell

plug follower
n. a tool used to allow removal of the cylinder plug while retaining the top pins, springs, and/or other components within the shell

plug holder
n. a holding fixture which assists in the loading of tumblers into a cylinder plug

plug retainer
n. the cylinder component which secures the plug in the shell

plunger lock
n. any of various spring–loaded locks or cylinders which move in or out to accomplish a locking function

pop out lock
n. a plunger lock usually used on vending machines to prevent operation of a T–handle

positional master keying
n. a method of master keying typical of certain binary type disc tumbler key–in–knob locks and of magnetic and dimple key cylinders. Of all possible tumbler positions within a cylinder, only a limited number contain active tumblers. The locations of these active tumblers are rotated among all possible positions to generate key changes. Higher level keys must have more cuts or magnets than lower level keys.

positive locking
n. the condition brought about when a key cut which is too high forces its tumbler into the locking position. This type of locking does not rely on gravity or spring pressure.

post (of a key)
n. the portion of a bit key between the tip and the shoulder, to which the bit(s) are attached

practical key changes
n. pl. the total number of usable different combinations available for a specific cylinder or lock mechanism

prep key
n. a type of guard key for a safe deposit box lock with only one keyway. It must be turned once and withdrawn before the renter's key will unlock the unit.

privacy key
n. 1. a key which operates an SKD cylinder

profile cylinder
n. a cylinder with a usually uniform cross section, which slides into place and usually is held by a mounting screw. It is typically used in mortise locks of non–U.S. manufacture.

progress
v. to select possible key bittings from the key bitting array, usually in numerical order

progression
n. a logical sequence of selecting possible key bittings, usually in numerical order from the key bitting array

progression column
n. a listing of the key bitting possibilities available in one bitting position as displayed in a column of the key bitting array

progression list
n. a bitting list of change keys and master keys arranged in sequence of progression

progressive
n. any bitting position which is progressed rather than held constant

proprietary
adj. of or pertaining to a keyway and key section assigned exclusively to one end user by the lock manufacturer. It may also be protected by law from duplication.

– R –

radiused blade bottom
n. the bottom of a key blade which has been radiused to conform to the curvature of the cylinder plug it is designed to enter

random master keying
n. any undesirable process used to master key which uses unrelated keys to create a system

rap
v. 1. to unlock a plug from its shell by striking sharp blows to the spring side of the cylinder while applying tension to the plug
2. to unlock a padlock shackle from its case by striking sharp blows to the sides in order to disengage the locking dogs

read
v. to decode a lock combination visually without disassembly of the lock or cylinder

read key
n. a key which allows access to the sales and/or customer data on certain types of cash control equipment (e.g., cash registers)

recombinate
v. to change the combination of a lock, cylinder, or key

recore
v. to rekey by installing a different core

register groove
n. the reference point on the key blade from which some manufacturers locate the bitting depths

register number
n. 1. a reference number, typically assigned by the lock manufacturer to an entire master key system
2. a blind code assigned by some lock manufacturers to higher level keys in a master key system

rekey
v. to change the existing combination of a cylinder or lock

removable core
n. a key removable core which can only be installed in one type of cylinder housing; e.g., rim cylinder or mortise cylinder or key–in–knob lock

removable cylinder
n. a cylinder which can be removed from a locking device by a key and/or tool

removal key
n. 1. the part of a two–piece key which is used to remove its counterpart from a keyway

renter's key
n. a key which must be used together with a guard key, prep key or electronic release to unlock a safe deposit lock. It is usually different for every unit within an installation.

repin
v. to replace pin tumblers, with or without changing the existing combination

reset key
n. 1. a key used to set some types of cylinders to a new combination. Many of these cylinders require the additional use of tools and/or the new operating key to establish the new combination.
2. a key which allows the tabulations on various types of cash control equipment (e.g., cash registers) to be cleared from the records of the equipment

restricted
adj. of or pertaining to a keyway and corresponding key blank whose sale and/or distribution is limited by the lock manufacturer in order to reduce unauthorized key proliferation

reversible key
n. a symmetrical key which may be inserted either way up to operate a lock

rim cylinder
n. a cylinder typically used with surface applied locks and attached with a back plate and machine screws. It has a tailpiece to actuate the lock mechanism.

RM
abb. row master key

root depth
n. the dimension from the bottom of a cut on a key to the bottom of the blade

rose
n. a usually circular escutcheon

rotary tumbler
n. a circular tumbler with one or more gates. Rotation of the proper key aligns the tumbler gates at a sidebar, fence or shackle slot.

rotating constant
n. one or more cut(s) in a key of any level which remain constant throughout all levels and are identical to the top master key cuts in their corresponding positions. The positions where the top master key cuts are held constant may be moved, always in a logical sequence.

rotating constant method
n. a method used to progress key bittings in a master key system, wherein at least one cut in each key is identical to the corresponding cut in the top master key. The identical cut(s) is moved to different locations in a logical sequence until each possible planned position has been used.

row master key
n. the one pin master key for all combinations listed on the same line across a page in the standard progression format

– S –

S/A
abb. sub–assembled

scalp
n. a thin piece of metal which is usually crimped or spun onto the front of a cylinder. It determines the cylinder's finish and may also serve as the plug retainer.

second generation duplicate
n. a key reproduced from a first generation duplicate

security collar
n. 1. a protective cylinder collar

segmented follower
n. a plug follower which is sliced into sections which are introduced into the cylinder shell one at a time. It is typically used with profile cylinders.

selective key system
n. a key system in which every key has the capability of being a master key. It is normally used for applications requiring a limited number of keys and extensive cross keying.

selective master key
n. an unassociated master key which can be made to operate any specific lock(s) in the entire system in addition to the regular master key(s) and/or change key(s) for the cylinder without creating key interchange

sequence of progression
n. the order in which bitting positions are progressed to obtain change key combinations

series wafer
n. a type of disc tumbler used in certain binary type disc tumbler key–in–knob locks. Its presence requires that no cut be made in that position on the operating key(s).

set–up key
n. a key used to calibrate some types of key machines

set–up plug
n. a type of loading tool shaped like a plug follower. It contains pin chambers and is used with a shove knife to load springs and top pins into a cylinder shell.

seven column progression
n. a process wherein key bittings are obtained by using the cut possibilities in seven columns of the key bitting array

seven pin master key
n. a master key for all combinations obtained by progressing seven bitting positions

shank
n. the part of a bit key between the bow and the stop; or, if there is no shoulder stop, the part between the bow and the near side of the bit

shear line
n. a location in cylinder at which specific tumbler surfaces must be aligned, removing obstruction(s) which prevented the plug from moving

shell
n. the part of the cylinder which surrounds the plug and which usually contains tumbler chambers corresponding to those in the plug

shim
1. n. a thin piece of material used to unlock the cylinder plug from the shell by separating the pin tumblers at the shear line, one at a time
2. v. to unlock a cylinder plug from its shell by using a shim

shoulder
n. 1. any key stop other than a tip stop

shouldered pin
n. a bottom pin whose diameter is larger at the flat end to limit its penetration into a counter–bored chamber

shove knife
n. a tool used with a set–up plug which pushes the springs and pin tumblers into the cylinder shell

shut out key
n. usually used in hotel keying systems, a key which will make the lock inoperative to all other keys in the system except the emergency master key, display key, and some types of shut out keys

shut out mode
n. the state of a hotel function lockset which prevents operation by all keys except the emergency master key, display key, and some types of shut out keys

side ward
n. a ward which prevents entry of an incorrect key into a non–cylinder lock

sidebar
n. a primary or secondary locking device in a cylinder. When locked, it extends along the plug beyond its circumference. It must enter gates in the tumblers in order to clear the shell and allow the plug to rotate.

simplex key section
n. a single independent key section which cannot be used in a multiplex key system

single–acting lever tumbler
n. a lever tumbler which must be moved a minimum distance to allow travel of a bolt, but cannot be moved so far as to restrict travel of the bolt

single key section
n. an individual key section which can be used in a multiplex key system

single step progression
n. a progression using a one increment difference between bittings of a given position

six column progression
n. a process wherein key bittings are obtained by using the cut possibilities in six columns of the key bitting array

six pin master key
n. a master key for all combinations obtained by progressing six bitting positions

SKD
symbol for "single keyed" normally followed by a numerical designation in the standard key coding system; e.g., SKD1, SKD2, etc. It indicates that a cylinder or lock is not master keyed but is part of the keying system.

slider
n. a tumbler which is normally flat, has a gate and moves with a linear or lateral motion instead of pivoting like a lever tumbler

SMK
abb. sub–master key

spacing
n. the dimensions from the stop to the center of the first cut and/or to the centers of successive cuts

special application cylinder
n. any cylinder other than a mortise, rim, key–in–knob or profile cylinder

split pin master keying
n. a method of master keying a pin tumbler cylinder by installing master pins into one or more pin chambers

spool pin
n. usually a top pin which resembles a spool, typically used to increase pick resistance

spring cover
n. a device for sealing one or more pin chambers

standard key coding system
n. an industry standard and uniform method of designating all keys and/or cylinders in a master key system. The designation automatically indicates the exact function and keying level of each key and/or cylinder in the system, usually without further explanation.

standard progression format
n. a systematic method of listing and relating all change key combinations to all master key combinations in a master key system. The listing is divided into segments known as blocks, horizontal groups, vertical groups, rows, and pages, for levels of control.

step pin
n. a spool or mushroom pin which has had a portion of its end machined to a smaller diameter than the opposite end. It is typically used as a top pin to improve pick resistance by some manufacturers of high security cylinders.

stepped tumbler
n. a special (usually disc) tumbler used in master keying. It has multiple bearing surfaces for blades of different key sections.

stop (of a key)
n. the part of a key from which all cuts are indexed and which determines how far the key enters the keyway

sub–master key
n. the master key level immediately below the master key in a system of six or more levels of keying

substitution code
n. a code whose individual characters are converted to individual key cuts or combination numbers by means of a reference table

switch lock
n. 1. a lock which incorporates an electrical switch as an integral part of its construction
2. a large padlock designed for use on railroad switches

– T –

tailpiece
n. an actuator attached to the rear of the cylinder, parallel to the plug, typically used on rim, key–in–knob or special purpose cylinders

theoretical key changes
n. pl. the total possible number of different combinations available for a specific cylinder or lock mechanism

three column progression
n. a process wherein key bittings are obtained by using the cut possibilities in three columns of the key bitting array

three pin master key
n. a master key for all combinations obtained by progressing three bitting positions

throat cut
n. the cut made into a key to bypass a throat ward

throat ward
n. an obstruction formed in a lock's case or horn at the point of key entry which prevents key rotation

thumb turn cylinder
n. a cylinder with a turn knob rather than a keyway and tumbler mechanism

tip
n. the portion of the key which enters the keyway first

tip stop
n. a type of stop located at or near the tip of the key

TMK
abb. top master key

tolerance
n. the deviation allowed from a given dimension

top master key
n. the highest level master key in a master key system

top of blade
n. the bitted edge of a single bitted key

top pin
n. usually a cylindrical shaped tumbler, usually flat on both ends and installed directly under the spring in the pin stack

total position progression
n. a process used to obtain key bittings in a master key system wherein bittings of change keys differ from those of the top master key in all bitting positions

try–out key
n. a manipulation key which is usually part of a set, used for a specific series, keyway, and/or brand of lock

tubular key
n. a key with a tubular blade. The key cuts are made into the end of the blade, around its circumference.

tumbler
n. a movable obstruction of varying size and configuration in a lock or cylinder which makes direct contact with the key or another tumbler and prevents an incorrect key or torquing device from activating the lock or other mechanism

tumbler spring
n. any spring which acts directly on a tumbler

two column progression
n. a process wherein key bittings are obtained by using the cut possibilities in two columns of the key bitting array

two pin master key
n. a master key for all combinations obtained by progressing two bitting positions

two step progression
n. a progression using a two increment difference between bittings of a given position

– U –

UL
abb. Underwriters Laboratories

unassociated change key
n. a change key which is not related directly to a particular master key through the use of certain constant cuts

unassociated master key
n. a master key which does not have change keys related to its combination through the use of constant cuts

uncombinated
adj. 1. of or pertaining to a cylinder which is or is to be supplied without keys, tumblers and springs
2. of or pertaining to a lock, cylinder or key in which the combination has not been set

uncontrolled cross keying
n. a condition in which two or more different keys under different higher level keys operate one cylinder by design; e.g., XAA1 operated by AB, AB1
NOTE: This condition severely limits the security of the cylinder and the maximum expansion of the system, and often leads to key interchange

unidirectional cylinder
n. a cylinder whose key can turn in only one direction from the key pull position, often not making a complete rotation

– V –

vertical group master key
n. the two pin master key for all combinations listed in all blocks in a line down a page in the standard progression format

VGM
abb. vertical group master key

visual key control
n. a specification that all keys and the visible portion of the front of all lock cylinders be stamped with standard keying symbols

VKC
abb. visual key control

– W –

ward
n. a usually stationary obstruction in a lock or cylinder which prevents the entry and/or operation of an incorrect key

ward cut
n. a modification of a key which allows it to bypass a ward

warded
adj. having one or more wards

– X –

X
symbol used in hardware schedules to indicate a cross keyed condition for a particular cylinder; e.g., XAA2, X1X (but not AX7)

– Z –

zero bitted
adj. of or pertaining to a cylinder which is or is to be combinated to keys cut to the manufacturer's reference number "0" bitting